City of Selma, Alabama Flood Risk Management Study Project Management Plan

A Partnership of
The U.S. Army Corps of Engineers
and
the City of Selma, Alabama

January 2019

Updated July 2020

US Army Corps of Engineers ®

City of Selma
Flood Risk Management (FRM) Study
Project Management Plan

About the Project Management Plan

The Project Management Plan (PMP) provides a summary of tasks required to complete the feasibility study and includes schedule and cost information, as well as documents revisions / updates to the PMP over the course of the study.

The scope and scale of tasks within the PMP are developed based on the decisions to be made during the study and the Project Delivery Team's (PDT) use of available management and decision-making tools, such as Decision Management Plans (DMP) and Risk Registers (RR).

The PMP is a living document, revised as key study decisions are made that shape the tasks and level of detail of the study, no less frequently than each milestone in the study. The first PMP developed will, by necessity, have less detail on tasks to be completed after initial decision points and milestones, including the selection of a tentatively selected plan / recommended plan. As the PMP is revised, it will provide updates of tasks that have been completed to date and additional tasks required to complete the feasibility study analysis and report.

The non-Federal sponsor (NFS) and U.S. Army Corps of Engineers (USACE) acceptance of the task descriptions, and time and cost estimates addressed in this PMP constitute agreement of the PMP overall, with the understanding that more detail will be provided for future tasks and milestones as the study progresses.

Project Management Plan Acceptance Sheet

I have reviewed this document and certify that it contains accurate content and is sufficient to guide the execution of the Mobile District GI Project.

Product Delivery Management Team Member	Date
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Project Delivery Team

The Scope Statement is distributed to all the project stakeholders for their approval. The Project Delivery Team leads are listed below:

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Document History

Project Management Plan, City of Selma, Alabama Flood Risk Management Study

Revisions to PMP

Revision Number	*Revision Date*	*Section*	*Description of Revision*	*Date Approved*	*Approved By*
Original PMP	10/09/2017		Original for Approval		
Revision # 1	07/02/2020		Update to Budget/Schedule		

List of Acronyms

ADM	Agency Decision Milestone
AM	Alternatives Milestone
APE	Area of Potential Effects
ATR	Agency Technical Review
BCERE	Baseline Cost Estimate for Real Estate
CAR	Coordination Act Report
CEFMS	Corps of Engineers Financial Management System
CSCR	Cost Share Control Record
CSRA	Cost and Schedule Risk Analysis
CWWBS	Civil Works Work Breakdown Structure
DQC	District Quality Control
DFR/EA	Draft Feasibility Report/Environmental Assessment
DMP	Decision Management Plans
EA	Environmental Assessment
EC	Engineering Circular
EM	Engineering Manual
EO	Executive Order
EPA	Environmental Protection Agency
ER	Engineering Regulation
FCSA	Feasibility Cost Sharing Agreement
FONSI	Finding of No Significant Impact
FR	Feasibility Report
FR/EA	Feasibility Report/Environmental Assessment
FRM	Flood Risk Management
FWCA	Fish and Wildlife Coordination Act
FY	Fiscal Year
ADNR	Alabama Department of Natural Resources
ADEM	Alabama Department of Environmental Management
GIS	Geographic Information System
H&H	Hydrology and Hydraulic
HTRW	Hazardous and Toxic Waste Materials
HQUSACE	Headquarters United States Army Corps of Engineers
IEPR	Independent External Peer Review
IPR	In-Progress Review
LEERD	Lands, Easements, Rights-of-Way, Relocations and Disposal Area
LP	Lead Planner
LPP	Locally Preferred Plan
MCACES	Micro-Computer Aided Cost Engineering System
MIPR	Military Interdepartmental Purchase Request
MOA	Memorandum of Agreement
MSC	Major Subordinate Command
NAHC	Native American Heritage Commission
NED	National Economic Development

LIST OF ACRONYMS (Cont'd)

NEPA	National Environmental Policy Act
NFS	Non-Federal Sponsor
NHPA	National Historic Preservation Act
OWPR	Office of Water Project Review
O&M	Operation and Maintenance
OC	Office of Counsel
PD	Planning and Environmental Division
PGM	Program Manager
P.L.	Public Law
PM	Project Manager
PMP	Project Management Plan
PDT	Project Delivery Team
PPA	Project Partnership Agreement
PPMD	Programs and Project Management Division
QA	Quality Assurance
RE	Real Estate
REP	Real Estate Plan
RIT	Regional Integration Team
ROD	Record of Decision
ROE	Rights-of-Entry
ROM	Rough Order of Magnitude
RONA	Record of Non Applicability
RR	Risk Register
S&A	State and Agency
SAD	South Atlantic Division
SDS	Spatial Data Standard
SHPO	Alabama State Historic Preservation Officer
SOW	Scope of Work
TPCS	Total Project Cost Summary
TSP	Tentatively Selected Plan
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VE	Value Engineering
VE/VM	Value Engineering/Value Management
VMP	Value Management Plan
VT	Vertical Team
WIK	Work-in-Kind
WRDA	Water Resource Development Act
WRRDA	Water Resource Reform and Development Act

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1.0 Foreword

The Feasibility Cost Sharing Agreement (FCSA) was signed by the non-Federal Sponsor, City of Selma, Alabama on 03 October 2018 and executed by the U.S. Army Corp of Engineers (USACE) Mobile District on 09 October 2018. The FCSA documents the partnership between the City of Selma and the USACE to address flooding and streambank erosion that has occurred in the City of Selma, which is located in Dallas County, Alabama.

1.1 Purpose of Scope Statement

1.1.1 Project Management Plan Scope

The purpose of the Project Management Plan (PMP) is to establish a strategy for management of the study to ensure that the project is executed in a manner that achieves program and project objectives, within approved schedules and budget, and maximizes effectiveness within the constraints of limited resources. This is accomplished through the development of a series of management plans that define the strategy for conducting project activities. It defines processes for the management of:

- Scope
- Cost
- Schedule
- Quality Assurance and Control
- Acquisition Strategy
- Risk Management
- Safety and Occupation Health Hazard Analysis and Monitoring
- Change
- Communications
- Value Management
- Data Management
- Project Closeout
- Project Approval

1.1.2 Project Business Need

The desired outcome of this project is to validate the Federal interest in addressing the flood damages occurring in the City of Selma and to identify and evaluate alternatives to alleviate the flood damages.

1.2 Project History

The City of Selma has experienced several significant flood events. In the last 100 years there have been 12 major floods, 19 moderate floods, and 9 minor floods.

PRIOR REPORTS

The latest report dated February 1967 on the Alabama-Coosa River system for flood control and related water uses is contained in House Document No. 66, Seventy-fourth Congress, first session. This report assessed the need for improvements for flood control on the Alabama River through Dallas County along with an economic update. Field investigations included a flood damage survey of the area, topographic surveys along possible levee locations in Selma and Selmont, and 54 borings to determine subsurface conditions in those localities. Office studies consisted of an evaluation of flood control and area redevelopment benefits; hydraulic and hydrologic analyses to determine flood profiles and internal drainage requirements; the preparation of plans and estimates; and, project economic analyses.

The 1967 report was prepared under provisions of House Document No. 308, Sixty-ninth Congress, first session, which was enacted into law with modifications in Section 1 of the River and Harbor Act approved January 21, 1927. The comprehensive plan to improve the river system for the purposes outlined in the Act included a 9-foot deep navigable channel from the mouth of the Alabama River to Rome, Georgia, on the Coosa River to be obtained by open-river works and locks and dams; the development of power at five navigation dams on the main stream and at three sites on headwater streams; and the regulation of stream flow by the construction of one reservoir for storage. Due to the limited development affected by floods at that time, no plan was presented for the protection of areas along the Alabama River at Selma, Alabama.

A prior report on the Alabama-Coosa River system for flood control and related water uses is contained in House Document No. 414, Seventy-seventh Congress, first session. This report recommended authorization of a general plan for the basin "-----in accordance with plans being prepared by the Chief of Engineers". The recommendations of the report were authorized by Congress in the River and Harbor Act of March 2, 1945. The basin plan at that time contemplated a 9-foot deep navigable channel from the mouth of the Alabama River to Rome, Georgia, to be obtained by open-river works and locks and dams; 15 dams and reservoirs on the Tallapoosa River and tributaries of the Coosa for the development of power, three of which would provide flood storage above the power pool and one would be entirely a storage project for the regulation of flow; four channel clearing projects on tributaries of the Alabama and Coosa; and, local flood protective works at Prattville, Alabama.

DESCRIPTION

Location. - Selma, the seat of Dallas County, is located in central Alabama 88 miles south of Birmingham, Alabama, and 50 miles west of Montgomery. It is situated partially on a bluff on the right bank of the Alabama River about 215 miles above its mouth.

Alabama River. - From its source at the juncture of the Coosa and Tallapoosa Rivers nine miles above Montgomery, the Alabama River flows generally west for 99 miles to Selma and then southwestward 215 miles to join the Tombigbee and form the Mobile River 45 miles north of Mobile. It has a total fall of 106 feet from Montgomery to its mouth of which 65 feet occurs below Selma. The Alabama River, which has a total drainage area of 22,500 square miles, drains 17,100 square miles above Selma. The river channel in the Selma reach is about 460 feet wide and has banks that average 40 feet in height. It has a bank-full capacity of about 50,000 cfs. The navigation pool that will be formed by the Millers Ferry Lock and Dam located 73 miles downstream will extend past the city to the Jones Bluff Lock and Dam now-under construction at mile 245.4.

Topography and geology. - Selma is in the Gulf Coastal Plain physiographic province north of the contact between the formations of the Cretaceous and Tertiary age. The land surface overlying the Cretaceous strata is characterized in part by rolling to hilly land and in part by gently rolling prairies. Subsurface investigations in the area indicate the soils to be sandy to lean clays, clayey sands, gravelly sands and sandy gravels which have been derived from the Cretaceous age formation.

The foundation soils in the area where floodwalls would be required for local protection in Selma are medium to stiff clays. A pumping station in the Selma area could be founded on Selma chalk, and in the Selmont area on dense to very dense sands. Drainage diversion channels excavated in sandy clays, silty-fine sands, clayey sands and clay may be subject to some erosion if adequate control measures are not provided. Sand and gravel aggregates for concrete structures are available from local commercial sources. The aggregates contain minor amounts of chalcedony and are potentially alkali reactive and will require the use of low alkali cement.

1.3 Study Authority

As part of the 2018 Supplemental Funding Package, the U.S. Army Corps of Engineers has identified long-term disaster recovery projects and additional short-term repairs to be accomplished. The purpose of the funds is to complete flood and coastal storm damage reduction studies in 14 states and two territories that will focus on the opportunities to reduce the overall flood risk facing the Nation and to provide technical assistance to communities to help them reduce their flood risk. The Selma Flood Risk Management Study has been included in the supplemental funding package and will be 100 percent funded by the Federal Investigations Account.

This report will be prepared under the authority contained in a resolution adopted by the Committee on Public Works of the House of Representatives on 7 Jun 1961 and in partial response to a resolution adopted by the Committee on Rivers and Harbors of the House of Representatives on 28 April 1936. The Chief of Engineers directed that an interim report covering the Alabama River in the vicinity of Selma pursuant to these resolutions be made on 5 March 1961. The resolutions are as follows:

Resolved by the Committee on Public Works of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the report on Alabama -Coosa Branch of Mobile River, Georgia and Alabama, published as House Document No. 66, Seventy-fourth Congress, first session, with a view to determining the advisability of providing improvements for flood-control on Alabama River in Dallas County, Alabama.

Resolved by the Committee on Rivers and Harbors of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors created under Section 3 of the River and Harbor Act approved June 13, 1902, be, and is hereby, requested to review the reports on the Alabama-Coosa Branch of the Mobile River System, Georgia and Alabama, submitted in House Document No. 66, Seventy-fourth Congress, first session, with a view to considering any change in economic conditions which might warrant a change in the recommendations heretofore submitted.

Furthermore, in accordance with a memorandum dated Feb 25, 2020 and signed by the Chief, Planning and Policy Division, Directorate of Civil Works, the investigation of streambank erosion measures is being conducted under the authority of Section 1203 of the Water Resources Development Act of 2018 which directs the Secretary to expedite the completion of a feasibility study for riverbank stabilization at Selma, Alabama. Section 1203 further allows the project to proceed directly to preconstruction planning, engineering, and design if the Secretary determines that the project is justified in a completed report.

1.4 The Study Process

A feasibility study works progressively through multiple iterations of the six-step planning process.

- Step 1: Identify problems and opportunities;
- Step 2: Inventory and forecast conditions;
- Step 3: Formulate alternative plans;
- Step 4: Evaluate alternative plan;
- Step 5: Compare alternative plans; and

- Step 6: Select a plan.

This planning process is iterative but through the iterations the study will achieve five key decision points or milestones. These milestones mark key decisions along the path to an effective and efficient study. With engagement of the Vertical Team (VT) and key HQUSACE Senior Leaders at the milestones, the PDT is assured that decisions made will not be revisited without good reason. Figure 1 depicts the Feasibility Study Milestone structure.

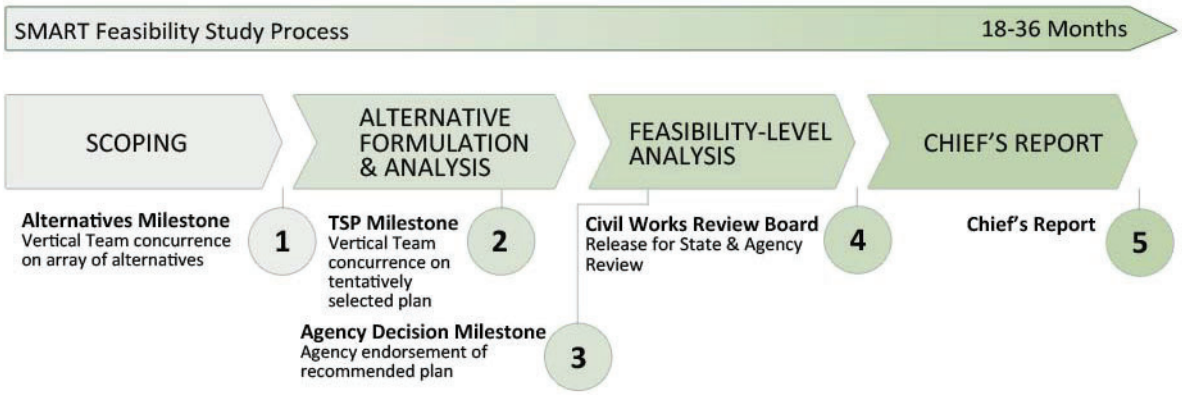

Figure 1: USACE Feasibility Study Milestones

1.4.1 Alternatives Milestone

The first decisional milestone during the feasibility study is the Alternatives Milestone where the VT agrees on the proposed way forward on continuing analysis and evaluation on a focused array of alternatives. In addition, there is VT agreement that the objectives of the study are consistent with USACE authorities and priorities.

1.4.2 Tentatively Selected Plan Milestone

The second decisional milestone during the feasibility study is the Tentatively Selected Plan (TSP) Milestone where the VT agrees on the recommendation of a National Economic Development (NED) Plan or a Locally Preferred Plan (LPP) that will be released as part of the draft feasibility study report for public and agency review, and the proposed way forward on developing sufficient cost and design information for the final feasibility study report.

1.4.3 Agency Decision Milestone

The Agency Decision Milestone (ADM) is a decision milestone where the recommended plan and proposed way forward for feasibility-level design is endorsed by a panel of senior USACE leaders. The ADM occurs after completion of the concurrent public, technical, legal, and policy review of the draft

report and National Environmental Policy Act (NEPA) document and resolution of the comments. Since the study requires IEPR, the milestone will be scheduled to follow receipt of the IEPR panel's findings, which could be up to 60 days after the public comment period, or longer if approved by the Chief of Engineers (per Section 2034 of WRDA 2007).

1.4.4 Civil Works Review Board

The Civil Works Review Board (CWRB) briefing and Senior Leader Panel have been replaced by the Chief of Planning's approval to release the draft report. This step now serves as the corporate checkpoint that the final decision report and NEPA document are ready for State and Agency (S&A) Review as required by the Flood Control Act of 1944, as amended (33 U.S.C. 701-1).

1.4.5 Chief's Report

After the S&A review, Environmental Assessment (EA) review, and the final Feasibility Report (FR) policy compliance certification have been completed, HQUSACE will prepare a recommendation package for processing to obtain signature of the Report of the Chief of Engineers (Chief's Report). Once the Chief of Engineers signs the report signifying approval of the project recommendation, the Chief of Staff signs the notification letters forwarding the Chief's Report to the Chairpersons of the Senate Committee on Environment and Public Works, and the House of Representatives Committee on Transportation and Infrastructure. The signed Chief's Report is then returned to HQUSACE, which prepares the final package for the Office of the Assistant Secretary of the Army for Civil Works (OASA (CW)).

1.5 Problems

The following flood risk management problems were identified in the Scoping Meeting with stakeholders and through coordination with the NFS:

a) Flooding in Wards 1 and 8 of the City of Selma and in the community of Selmont
b) Riverbank erosion along the Alabama River throughout the City of Selma
c) Impacts to bridge crossings on tributaries during flood events
d) Stormwater drainage during flooding events

1.6 Opportunities

Based on the identified problems, the opportunities identified in the initial steps and iterations of the planning process were:

a) Reduce effects of riverine flooding in the Selma and Selmont area

b) Provide additional recreation opportunities, including those that increase access to the Alabama River
c) Revitalize historic Selma and nearby communities
d) Stabilize Alabama River's bank through Selma
e) Improve Infrastructure

1.7 National Objectives

The national or Federal objective of water and related land resources planning is to contribute to National Economic Development (NED) consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, and other federal planning requirements. Contributions to NED are increases in the net value of the national output of goods and services, expressed in monetary units. Benefits that contribute to NED are the direct net benefits to the nation that accrue in the study area.

1.8 Planning Objectives

Specific planning objectives have been identified to solve the problems by taking advantage of opportunities. These planning objectives focused on flood risk management and are as follows:

1. To reduce flood damages from the Alabama River to structures and critical infrastructure.
2. To increase community resiliency during and in recovery from floods from the Alabama River.
3. Improving right descending bank stability between river mile 261 and 256 along the Alabama River
4. The objective ancillary to flood risk objective is to increase access to water based recreation in the area of Selma Alabama.

1.9 Project Assumptions and Constraints

1.9.1 Assumptions

The PDT developed the following preliminary assumptions. The PDT will review and refine these assumptions during the feasibility study:

a) Flooding in the City of Selma along the Alabama River will be the primary focus of the study;
b) A full analysis of reasonable alternatives will be performed, including the no action alternative, and structural and non-structural measures, to optimize feasible alternatives to address flood risk while minimizing environmental effects;
c) Modeling studies conducted during the feasibility phase will include hydrologic, hydraulic, economics, and potentially sedimentation;

d) Public involvement will be achieved through public meetings, workshops, and interagency working group meetings;
e) At a minimum, an Environmental Assessment pursuant to NEPA would be prepared;
f) The NED Plan or a Locally Preferred Plan (LPP), if one is identified by the non-Federal sponsor, will require compliance with applicable federal laws and regulations as well as applicable Executive Orders and policies. Applicable Federal environmental laws include but are not limited to the NEPA, Endangered Species Act, National Historic Preservation Act (NHPA), Clean Air Act, and Clean Water act; and
g) Threatened and endangered species as well as sensitive cultural resources may be present within the study area. Potential impacts to these environmental resources will require coordination with applicable Tribes and appropriate resource agencies.

1.9.2 Constraints

Planning constraints are significant barriers or restrictions that limit the extent of the planning process. Study-specific planning constraints are statements of things unique to a specific planning study that alternative plans should avoid. The following constraints (i.e. limitations on the range of measures and alternatives that can be proposed) have been identified for the study:

a) Minimize adverse impacts to the endangered Alabama Sturgeon, Heavy Pigtoe Muscle, Orangeacre Mucket Muscle, Tulomtoma Snail and their critical habitat in the Alabama River in the Selma Area;
b) Minimize adverse impacts to the Cultural Resources in the Alabama River in the Selma Area;
c) Minimize adverse impacts to the view sheds of historic structures;
d) Avoid adverse impacts to the possible CAP Section 14 Project in the study area;

2.0 Project Management Plan Detailed Scope of Work

This PMP provides the scope of work by individual discipline and subdivided into the five key milestones. Upon approval by the Chief of Planning to release the draft Chief's Report for State and Agency Review, the team will develop and compile the Study File. The study file will document the PDT's work files and materials and store them in a suitable location for later reference.

2.1 Project Management

The Project Manager (PM) is responsible for project delivery across all milestones, including budget, schedule, and involvement of the appropriate disciplines in both PDT and review assignments. Programs and Project

Management Division (PPMD), Civil Works Branch, has direct oversight responsibilities for the project. Internal (day-to-day) control shall reside with the assigned PM. Internal oversight (control) shall reside with the appropriate functional Section, Branch, and Division of the specific PDT members working on the project. Project Management activities include those efforts of the entire PPMD team supporting the PM by performing both program management and budget analysis. These activities include:

a. The Budget Analyst provides assistance with budgeting, performing actions within the Corps of Engineers Financial Management (CEFMS) database, distribution of funds for both labor and non-labor requirements, preparing contractual purchase requests (A-E services, lab testing, etc.), providing reports as needed, maintaining fiscal related records, collection of funds, and, on occasion, accomplishing cost transfers as necessary to support the study budget needs. Once funds are collected in CEFMS by the Budget Analyst, all funds are loaded into a cost share control record (CSCR) by Resource Management Division.

b. The PM periodically reviews and updates the CSCR throughout the progression of the study and updates the PDT and NFS on status of study budget.

c. The PM provides overall guidance to PDT to assure the study remains consistent with the PMP scope, budget, and schedule.

d. The Program Manager processes budget requests, coordinates with the vertical programs team at South Atlantic Division (SAD) and HQUSACE, and works with the PM to secure the funding level necessary to support the study schedule.

e. The Program Manager tracks study funds at the program level and alerts the PM if shortfalls or carryovers are foreseen in fund execution, as compared to the scheduled amounts, and the anticipated impact to the overall program execution for the given Fiscal Year (FY).

f. The PM works to assure the study does its part to meet the District's fiscal program goals and coordinates anticipated deviations or delays with the Program Manager in an effort to avoid unnecessary impacts to the District's goals.

g. The PM is responsible for communicating on a regular basis with the NFS and their partners in the study to assure study expectations are managed in accordance with the FCSA. These expectations primarily relate to scope, budget, and schedule but occasionally require additional coordination with stakeholders to support the study effort and the NFS. This coordination can often include, within reason, the attendance of council meetings, stakeholder meetings/workshops, or community events which concern the study efforts.

h. Though dependent on internal oversight by functional managers to assure the correct resources are provided to serve on the PDT, the PM should identify potential issues and bring them forward for early resolution in an effort to minimize unexpected study outcomes and aid in managing study expectations.

i. The PM is responsible for updates to the PMP as may be required during the course of the study and to coordinate formal changes in scope, budget, and/or schedule with the Civil Works Branch Chief of PPMD, Planning Division (PD) Chief, the functional managers, and the NFS.

j. The PM shall obtain the study reports from PD prior to the relative milestones and assure they have been subjected to all required levels of review in accordance with the publically posted study review plan (RP) and in accordance with current USACE guidance.

k. The PM will work closely with the Lead Planner to assure the materials prepared for USACE VT checkpoints and milestones and the public workshops throughout the study are prepared in advance, internally vetted/reviewed, and shared with the NFS as appropriate prior to the presentation.

2.2 Plan Formulation

The Lead Planner (LP) shall serve as the study manager for all elements that may be involved in the FR preparation and documentation related to the study as outlined below:

a. The LP will coordinate Plan Formulation, Economics, and Environmental Resources tasks and documentation, including supplemental or new environmental documents, planning review and participation, and assistance to Project Management relating to activities, in accordance with current guidelines outlined in Engineering Regulation (ER) 1105-2-100. This includes providing detailed information for work done by other PD elements, coordinating, directing, monitoring, and modifying work as required and agreed by the NFS and the PM, reviewing results and reports provided by the technical support staff, correspondence, inter-organization coordination, conference preparation and presentation.

b. The LP and PM hold periodic meetings with the NFS to report on technical issues and the status of the technical effort. The LP holds PDT meetings as necessary.

c. The LP will monitor and provide input to the required PD tasks and coordination performed; resulting in the production of quality support documentation by PD. The LP will monitor the scope and progress of the PD activities to ensure that the PD work effort remains on track, within budget and on schedule, and that any potential impacts

on scope, schedule, and cost are fully coordinated with the PM and resolved.

d. The LP's functions will include plan formulation activities, including interdivision coordination, technical review coordination, and the review, refinement and input to alternative plans. The LP will ensure that all plan formulation documentation is prepared in accordance with pertinent engineering, environmental, and economic guidance and regulations. This includes development, participation, and documentation of the required public involvement program to solicit citizen input, participation, and acceptance of the project design elements.

e. In support and assistance to the PM, the LP will serve to provide project continuity and input on all matters which PD may have knowledge of that may affect the outcome of the study. This includes complete review and input for any matter upon which the PM may require assistance, including problem resolution, participation on the PDT, and maintaining contact with the NFS.

ALTERNATIVES MILESTONE

The LP will conduct meetings, oversee and contribute to screening criteria applied to arrive at a focused array of alternatives, and facilitate the team toward arriving at the focused array. The LP conducts the scoping charette and facilitates the Alternatives Milestone meeting.

To reach this milestone the LP assists the PDT with narrowing the initial array of alternatives to be considered by:

- Coordinating PDT efforts toward reducing uncertainty about planning decisions for the focused array of alternatives that are carried forward for further analysis and evaluation,
- Facilitating the PDT to assess screening criteria to reach a focused array of alternatives,
- Developing with the team existing conditions and the socio-economic sections in the draft appendix,
- Engaging the Planning Centers of Expertise and the VT (including the Regional Integration Team (RIT), ATR lead and Office of Water Project Review (OWPR) lead) during In-progress Reviews (IPRs) and informal communication as needed.

Before the Alternatives Milestone meeting and with support from the LP, the PDT:

- Updates the draft Report Synopsis and provides the draft to the VT as a read-ahead
- Updates the DMP and RR
- Updates the team's process documents as needed with the next steps of the study – the DMP, RP, etc.

TENTATIVELY SELECTED PLAN MILESTONE

The LP ensures each alternative in the focused array, plus the without project/no action alternative, is evaluated based on the criteria chosen in the Alternatives Milestone, criteria necessitated by guidance or regulation, and the extent each alternative meets the overall planning objectives and constraints. The LP will facilitate selection of the tentative plan, prepare all reporting documentation for the milestone with the support of the PDT, and coordinate District Quality Control (DQC) reviews and Agency Technical Reviews (ATR).

- Support and oversee selection of the TSP by the PDT
- Support In-progress Reviews as needed with the PDT and Vertical Team
- Update the risk register, DMP, and documentation of key decisions (decision log)
- Facilitate the TSP milestone meeting

AGENCY DECISION MILESTONE

The LP will support this review process by coordinating prompt PDT member responses to ATR, IEPR, policy review, and public review comments; providing responses; working with the PDT to resolve comments to the extent practical; revising the draft report and ensuring PDT members revise all modeling and draft appendices as necessary; reporting revised results to management; and preparing for and facilitating the milestone meeting.

- Support DQC and ATR; ensure PDT has responded to and resolved reviews
- Complete the draft main report

Before the ADM meeting the LP:

- Considers all review comments, assign PDT members to respond to comments
- Holds IPRs as necessary
- Supports resolution of review comments through coordinating PDT member responses, changes to the appendices, changes to the modeling, and additional analysis as needed
- Updates the RR and develops a summary of significant (“High”) risk issues that will be addressed during the feasibility-level design phase of the study or that the team plans to carry forward into Pre-Construction Engineering and Design.
- Ensures risk and uncertainty analysis is conducted by PDT

After the ADM meeting, the LP:

- Develops the Final Draft Report

- Ensures coordinated PDT effort for the Feasibility-Level Design phase
- Facilitates In-progress reviews (IPRs) as necessary to resolve any policy or agency issues
- Supports release of Division Commander's Notice

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

Revision to modeling and final results may be required from the feasibility-level design phase as well as additional reviewer comments. The LP will support this process by coordinating PDT efforts and the decision-making process including timely responses to reviewer comments and necessary revisions to modeling, the appendices, and main report.

- Help resolve District, Division, and Agency Technical Review (ATR) comments
- Revise Feasibility Report/Environmental Assessment (FR/EA) as needed
- Support conclusion of Feasibility-Level Design phase: revised modeling, reports and documented results
- Support presentation to the Civil Works Review Board

CHIEF'S REPORT MILESTONE

GOAL/ACTION

- Support resolution of state and agency comments
- Support completion of Final Feasibility Report and submit to HQUSACE

2.3 Environmental Resources

This section describes the effort required for the environmental, biological, and cultural studies to support the Feasibility Study. An integrated FR/EA will be completed to comply with the NEPA and other applicable Federal laws, Executive Orders, and USACE policies and guidelines.

The appendices shall include preparation of a 404(b)(1) Evaluation, a request to the Alabama Department of Environmental Management (ADEM) for 401 Certification (in compliance with the Clean Water Act), Air Quality Impacts Determination Record of Non Applicability (RONA), Fish and Wildlife Coordination Act Report, Section 7 consultation (in compliance with the Endangered Species Act), agency correspondence, and agency and public comments with USACE responses. Other appendices may be included that provide significant information to be considered by decision makers.

The draft integrated FR/EA document will be circulated to appropriate Federal, state, and local governments, tribes, public agencies, interested organizations,

and individuals. Comments received on the draft EA will be addressed, revisions will be made in accordance with Federal and State laws, and a final FR/EA will be prepared.

The Environmental team member will work closely with the LP to complete the FR/EA. The LP will serve as the primary author for the integrated report; the Environmental team member will ensure that the report is technically adequate for purposes of compliance with the NEPA. The Environmental team member shall be responsible for preparing the following sections of the integrated report including: 1) Affected Environment; 2) Environmental Consequences; 3) Coordination and Consultation; 4) Environmental Law Compliance and Commitments; 5) Acronyms and Glossary; 6) Cumulative Impacts, and 7) References as they pertain to the environmental portions of the integrated report. A draft Finding of No Significant Impact (FONSI) will be prepared to accompany the final EA.

The Environmental team member will provide a description of existing and expected future without-project conditions for each of the following resource areas. This will serve as the affected environment section to satisfy NEPA requirements and will also provide descriptions of baseline and future without-project conditions to satisfy plan formulation requirements. Descriptions of all and cumulative impacts that would be induced by implementation of the project, reasonable alternatives, and any mitigation measures that would be required to address these impacts shall be described.

- Physical Environment: This section will identify and describe all physical features including geology, topography, erosion, and sedimentation. An assessment of potential impacts of each alternative shall be analyzed and compared.
- Water Resources: Existing water quality related data including surface and ground water quality shall be discussed. An assessment of potential water resources impacts of each alternative shall be analyzed and compared. A 404(b)(1) analysis demonstrating substantial compliance with the Clean Water Act shall be prepared.
- Air Quality: Existing information on baseline air quality data shall be described to document the ambient air quality conditions within and adjacent to the study area. Future trends for air quality based on State Implementation Plans or other applicable air quality attainment plans shall be described.
- Climate Change: The most recent information regarding the significance of global climate change shall be described and the potential impacts that global climate change may have on the proposed project shall be described.
- Land Use: Review of applicable land use plans, such as general plans, comprehensive plans, etc., shall occur to identify existing and planned land uses for lands within the project study area. In addition, applicable

land use policies will also be noted and described. An assessment of potential land use impacts of each alternative shall be analyzed and compared.

- Cultural Resources: The most recent information regarding cultural resources will be used to make effects determinations.
- Fish and Wildlife Resources: The most recent information regarding fish and wildlife in the study area will be used to assess impacts of the proposed action and alternatives.
- Special-status Species: The most recent information regarding special-status species will be used to make effects determinations.
- Noise: The existing noise environment in the vicinity of the study area shall be assessed, including existing noise sources and sensitive receptors (residences, hospitals, etc.), including noise-sensitive wildlife. This includes determining local noise standards and regulations and assessing noise levels that would result from implementing and operating the project alternatives. An assessment of potential noise impacts of each alternative shall be analyzed and compared.
- Hazardous and Toxic Waste Materials (HTRW): Summarize the findings of the HTRW database review that will be performed by the Mobile District Geotechnical Section.
- Socioeconomics and Environmental Justice: Discuss population, housing, and employment information for the project vicinity, including an assessment of minority and low-income populations impacted. Any disproportionate impacts to these populations from implementation of any of the alternatives will be identified in accordance with Executive Order 12898. An assessment of potential socioeconomics and environmental justice impacts of each alternative shall be analyzed and compared.
- Traffic and Transportation: Describe various means of transportation and traffic patterns in and around the study area and describe impacts of the proposed project may have on local and regional traffic and transportation systems.
- Public Services and Utilities: Describe existing utilities obtained from Engineering Division, the NFS, and other entities in the study area, including electrical and gas facilities and pipelines, wastewater facilities, telecommunications, etc. This section will also describe relevant public services in this area, such as public schools, law enforcement, fire protection, etc. Potential impacts to public services and/or utilities from implementation of the alternatives will be analyzed and compared, including any mitigation measures needed to address those impacts.
- Recreation: Describe recreation resources in the vicinity of the study area. This includes parks, trails, and other recreational use areas. Potential impacts to existing and future recreation from implementation of

the alternatives will be described, including any mitigation measures needed to address those impacts. An assessment of potential recreational impacts of each alternative shall be analyzed and compared.

- Safety and Public Health: Describe baseline conditions including medical and emergency needs within the proposed project area and how public safety and health issues may be impacted by the proposed project, and address potential issues such as fire, mosquitoes, and risk to human life as identified in Executive Order 11988, by complying with ER 1165-2-26, Water Resources Policies and Authorities.
- Implementation of Executive Order 11988 on Floodplain Management. An assessment of potential safety and public health impacts of each alternative shall be analyzed and compared.
- Aesthetics: Describe the aesthetic setting for the study area including visual quality, auditory quality, oratory quality, and other inherent esthetic qualities that may be impacted by the proposed project. An assessment of potential aesthetics impacts of each alternative shall be analyzed and compared.
- Sustainability: Describe the baseline conditions and the potential impacts the proposed project may have on environmental, economic, and energy sustainability within the study area.
- Cumulative Impacts: Describe past, present and reasonably foreseeable future impacts and relate to current study.

2.3.1 Environmental Coordination

ALTERNATIVES MILESTONE
To reach this milestone the Environmental team member supports narrowing the initial array of alternatives to be considered and will:

- Conduct a literature search including review of existing environmental studies of the study area. An initial field visit was conducted in June 2016 to identify potential problems and opportunities in the watershed. An additional, more detailed field investigation is planned to collect detailed information that will be used to identify and screen alternatives. Information based on literature searches, field visits, and existing environmental conditions will be documented, compiled, and incorporated into the baseline conditions of the Affected Environment Section of the Integrated Report.
- Site visits, and meetings with local officials, as necessary.
- Attend planning charette for alternatives development, includes a site visit to identify resources located in the study area.
- Prepare for and participate in the NEPA meeting, if applicable, includes a site visit to identify resources located in the study area.
- Review problems and opportunities for the study area and review and define objectives and constraints with PDT. Participates in the development of alternatives in coordination with PDT.
- Participate with the PDT to refine Draft FR/EA outline, including the NEPA purpose and need statement.
- Mapping/Spatial Analysis. Determine requirements for spatial analysis, if any. Perform mapping/survey or develop and administer contract as appropriate for resources. In coordination with the Geographic Information System (GIS) analyst, map of recreation, land use patterns, etc. and enter into the GIS database.
- Document existing and future-without project environmental conditions in the Affected Environment Section of the Integrated Feasibility Report. Identify requirements of the NEPA, other applicable Federal environmental laws and Executive Orders with which the study project must comply.
- Prepare Affected Environment Section and conceptual discussion of no action, without project, and action alternatives for the Alternatives Milestone including biological resources and cultural resources. This includes the following:
    - Prepare material for the Alternatives Milestone shall be sufficient to demonstrate an appropriate array of alternatives has been defined for the NEPA document and in accordance with applicable USACE policy.

  - Maintain environmental portion of administrative record for the project. Identify resource issues which may affect alternatives under consideration.

- Coordinates with the LP to complete the report for DQC on existing and future-without project environmental conditions.
- Prepare for and participate in Alternatives Milestone Conference with VT for concurrence on the array of alternatives and respond to comments.
- Coordinate with the EPA, U.S. Fish and Wildlife Service (USFWS), and other resource agencies for participation in charette or review of conceptual alternatives.

TENTATIVELY SELECTED PLAN MILESTONE

- Visit the site to analyze impacts of the alternatives.
- Revise existing and future without project report based on DQC, ATR, and policy and legal reviews.
- Provide input into the development and screening of alternatives.
- Coordinate with GIS analyst to update mapping as appropriate based on refined alternatives.
- Prepare analysis of alternatives for each appropriate resource area and prepare the Environmental Consequences Section for inclusion into the Feasibility Report. The environmental document will include a section on potential direct, indirect, and cumulative impacts for each project alternative. Cumulative impacts will include discussion of past, present, and reasonably foreseeable future actions under each alternative. Potential impacts will be determined by comparing the future with and future without project conditions. Prepare draft documentation and appendices.
- Develop a draft 404(b)(1) analysis and coordinate with Regulatory Division as appropriate.
- Prepare draft Compliance with Environmental Laws section. Compliance with Applicable Laws and Regulations section shall include:
  - Endangered Species Act, as amended (16 U. S. C. 1531 et seq)
  - Fish and Wildlife Coordination Act of 1958 (Public Law 85-624)
  - Migratory Bird Treaty Act (MBTA) (16 U. S. C. 715- 715s)
  - Clean Water Act 33 U.S. C. 1251 et seq.
  - Clean Air Act of 1970 (42 U.S.C. 7401 et seq.)
  - Noise Control Act of 1972 (42 USC 4901 et seq.) as amended
  - National Historic Preservation Act (16 U.S.C. 460b, 470l-470n)
  - Federal Water Project Recreation Act (Public Law 89-72)

  - Comprehensive Environmental Response, Compensation and Liability Act (42 U. S. C. 9601 et seq.)
  - Executive Order 11514, Protection and Enhancement of Environmental Quality
  - Executive Order 11991, Relating to Protection and Enhancement of Environmental Quality
  - Executive Order 11988, Floodplain Management
  - Executive Order 11990, Protection of Wetlands
  - Executive Order 12088, Federal Compliance with Pollution Control Standards
  - Executive Order 12898, Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
  - Executive Order 13112, Invasive Species
  - Executive Order 13148, Greening the Government through Leadership in Environmental Management
- Prepare appropriate best management practices and/or avoidance, minimization, and/or compensation measures for affected resources.
- Document public involvement and necessary consultations, develop a list of document preparers, and a Glossary and Acronyms Section.
- Coordinate with the lead plan formulator to prepare documents for DQC, ATR, IEPR, and legal and policy review.
- Respond to DQC, ATR including NFS comments, IEPR, and legal and policy review comments in Dr. Checks or other written format, as requested.
- Coordinate with PDT on selection of TSP.

AGENCY DECISION MILESTONE

- Prepare written responses to DQC, ATR, IEPR comments, and legal and policy review. Revise documents as necessary.
- Revise the impact analysis (Environmental Consequences), avoidance measures for affected resources, Cumulative Impacts, Compliance with Environmental Laws, and regulations based on received comments from agencies and the interested public.
- Coordinate with the Lead Planner to revise the Executive Summary and complete the report for the public and agency review.
- Coordinate to receive a Section 401 Water Quality Certification and stream buffer variance from the appropriate agency.
- Prepare Public Notice for electronic release to all interested parties.

- The FR/EA document shall be circulated electronically to appropriate Federal and State agencies, interested organizations, and interested parties for a minimum of 30 days. The Environmental team member shall be available to respond to questions.
- Prepare for and participate in Final Public Meeting (if applicable) during the public comment period.
- Prepare for and be available to participate in the Milestone Conference.

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

- Respond to public review comments and prepare final FR/EA. Incorporate and respond to written public review comments on the draft FR/EA, oral comments presented at the final public meeting, and internal review comments.
- Prepare Final FR/EA for VT coordination and input into Final Chief's Report.
- Distribute final EA for S&A Review and to other appropriate agencies and interested parties electronically (similar to the draft report).
- Complete DQC on the final FR/EA.
- Respond to S&A Review comments.
- Prepare Draft Finding of No Significant Impact (FONSI).

2.3.2 Biological Resources

The biological resource studies for this project will primarily focus on flood risk management. The integrated FR/EA document will evaluate the effects of the alternative plans on biological resources and satisfy the requirements of NEPA and other Federal and state environmental laws.

The study environmental team member makes a determination under the Endangered Species Act for any Federally listed Threatened or Endangered species with the potential to be affected by the proposed project. For the purposes of this PMP, formal consultation with the USFWS under Section 7 of the Endangered Species Act is assumed not to be required. Formal consultation procedures with USFWS are not included in this scope.

The scope of work was assumes that compensatory mitigation of environmental resources will not be necessary; and therefore, an Ecological Benefits Model certified in accordance with USACE Planning Guidance will not be necessary to support plan formulation. So they are not included in the scope of work.

The habitat and species assessment will include mapping and inventory of all major habitat types within the study area. Biological resources information will be supplemented with information provided by the USFWS under a separate task in accordance with the Fish and Wildlife Coordination Act. The following specific

tasks will be performed during the feasibility study in support of the preparation of the integrated FR/EA.

ALTERNATIVES MILESTONE

- Review environmental information in preparation for the public scoping meeting(s) to solicit input concerning study scope, local interests, and concerns to be addressed in the FR/EA. Participate in public scoping meeting(s).
- Site visits, and meetings with local officials, as necessary.
- Prepare for and participate in the NEPA public scoping meeting, includes a site visit.
- Review problems and opportunities for the study area and review and define objectives and constraints with PDT. Participate in the development of alternatives in coordination with the PDT.
- Baseline Conditions and Future Without Project information for biological resources will be established based upon review of existing information (literature review) including, but not limited to published and unpublished reports on biological resources specific to the proposed project area, general information on the species and habitats that occur in the proposed project area, existing NEPA documents for similar projects and field surveys and investigations conducted for this study.
- GIS Mapping/Spatial Analysis. Determine requirements for spatial analysis including habitat mapping requirements and species survey requirements. Perform mapping/survey or develop and administer contract as appropriate. In coordination with the GIS analyst, the mapping of riparian, wetland, and significant upland habitats, and known locations of species of concern will be entered into the GIS database.
- An initial survey would be conducted to verify the general habitat within the proposed project area. Document existing and future without project biological resources conditions including vegetation types, animal presence, wildlife corridors, and sensitive species.
- Prepare and manage a SOW and Military Interdepartmental Purchase Request (MIPR) for USFWS participation in accordance with the Fish and Wildlife Coordination Act. The SOW shall be prepared with enough detail to contract necessary field studies, sample collection, and data analysis necessary to inform the Coordination Act Report (CAR).
- Prepare for and participate in PDT and project coordination meetings with agencies to include, but not limited to the NFS, USFWS, Alabama Department of Conservation and Natural Resources (ALDCNR), resource agencies, and stakeholders.
- Provide input into the development of the feasibility-level alternatives related to biological resources. Identify resource issues which may affect alternative under consideration.

- Prepare and participate in Alternative Milestone meeting for concurrence on the array of alternatives.

TENTATIVELY SELECTED PLAN MILESTONE

- Revise existing and future-without project report based on DQC, ATR, and policy and legal reviews.
- Provide input into the development and screening of alternatives. Coordinate with the PDT on necessary mitigation and formulate mitigation measures as required.
- Coordinate with GIS analyst to update mapping as appropriate based on refined alternatives.
- Potential impacts of alternatives to biological resources will be evaluated. Documentation will include descriptions of feasibility-level alternatives and impact (beneficial and adverse) to biological resources from each alternative.
- Prepare a determination under the Endangered Species Act for Threatened or Endangered species or their critical habitat that may be affected by project activities. Conduct informal coordination with the USFWS if species will be affected.
- Coordinate with USFWS on Draft CAR under FWCA.
- Coordinate with PDT on selection of TSP.
- Participate in the review process meetings and response to comments.
- Prepare for and attend the TSP Milestone conference.

AGENCY DECISION MILESTONE

- Refine impact analysis and mitigation plans based on updated information and comments provided at the TSP Milestone meeting.
- Review draft CAR from USFWS and provide comments. Coordinate receipt of final CAR.
- Refine a monitoring and adaptive habitat management plan to record the success of the recommended mitigation, if applicable.
- Assist in preparing draft FR/EA Document for public review.
- Prepare for and participate in final public meeting, if applicable. Provide pertinent information to meeting facilitator, prepare response to public comments.

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

- Respond to public review comments and prepare Final FR/EA. Incorporate and respond to written public review comments on the draft FR/EA, oral comments presented at the final public meeting, and internal comments.
- Prepare Final FR/EA for VT coordination and input into Final Chief's Report.
- Complete DQC on the final FR/EA.
- Respond to State and Agency Review comments.

2.3.3 U.S. Fish and Wildlife Service (USFWS) Coordination

This section describes the effort required to support the Feasibility Study. This task includes studies by the USFWS in fulfillment of the requirements of the Fish and Wildlife Coordination Act. The principal USFWS product is a draft and final CAR. The USFWS (or agreed upon contractor) will participate in field studies, collect samples, and analyze data in support of the CAR, as needed. The CAR will present USFWS opinions on impacts of alternatives on fish and wildlife resources and recommend types and amounts of mitigation for habitat losses. The USACE will coordinate with USFWS and supervise the interagency contract as part of its environmental impact studies task. As part of the coordination process, the USFWS, along with the USACE may assess existing and with-project habitat values using a habitat evaluation.

- The CAR will be prepared by the USFWS in support of the recommended plan.
- Attendance and participation in the functional habitat evaluation assessment from the alternatives through ADM, if necessary.
- Attend meetings, conferences, reviews, and coordinate as required and assist in the feasibility study throughout all the study milestones. All data collected and/or developed shall be fully coordinated with the study team and the NFS.

2.3.4 Cultural Resources Studies

This section describes the effort required for the cultural resources studies to support the feasibility study. This task will be conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, 36 CFR 800 "Protection of Historic Properties," and USACE ER 1105-2-100. This task will determine the impacts of action alternatives on cultural resources within the proposed project area. Estimates are based on the assumption that several resources are present, and will require moderate-level investigation; and that Native American groups in the area are active and may require higher than average consultation. The presence of large, complicated resources would

require additional time and funding not included in this SOW. The end product of this task shall be a professional technical report that describes all known or identified cultural resources and historic properties within the Area of Potential Effects (APE) and assesses the potential impact of the selected project alternative on these resources. The report will also describe the potential range of preservation or mitigation efforts and the associated costs of these studies.

ALTERNATIVES MILESTONE

- Attend and participate in meetings and site visits.
- Baseline conditions for cultural resources will be established based on review of existing information (records and literature review). This review includes, but not limited to published and unpublished reports on previous archival and archeological investigations, known/recorded sites, and general culture history for the APE based upon previous research. The records and literature search will involve review of archeological resources maps, historic topographic maps, and historic register lists. All the searches are for data on cultural resources, including prehistoric, historic, cultural, and spiritual/religious sites. A search will be requested from the Native American Heritage Commission to determine whether or not sacred sites are recorded within or near the study area. Identified cultural resources will be evaluated for potential eligibility for the National Register of Historic Places.
- Prepare existing and future without project documentation.

TENTATIVELY SELECTED PLAN MILESTONE

- Attend and participate in meetings.
- Review and update baseline conditions as needed. Obtain additional detail for both without project and with project conditions.
- Depending on the level of current cultural resources survey in the footprint of the TSP, additional cultural resource surveys may be necessary and will be conducted after selection of the TSP.
- Coordination/Consultation with Alabama State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act (36 CFR 800), as amended. The USACE determines the APE, the presence/absence of historic properties, and the effect of the project on those properties, and request concurrence from SHPO on the APE and effects determinations.
- Native American Consultation - Native American issues will be addressed in accordance with Section 106 of the National Historic Preservation Act, and the American Indian Religious Freedom Act of 1978. These laws and regulations all require that government agencies consult with Federally Recognized Native American Tribes to determine their interests in Federal projects. Based on a list provided by the Native American Heritage Commission (NAHC), the USACE will notify Federally Recognized Native

American groups known to have an interest in the APE for the proposed project.

- Coordinate with Environmental Coordinator on draft FR/EA documentation. Documentation will include descriptions of feasibility-level alternatives and preliminary impact (beneficial and adverse) to cultural resources from each alternative.
- Participate in the review process meetings and response to comments.
- Prepare for and attend the TSP milestone conference.
- Prepare for and participate in final public meeting. Provide pertinent information to meeting facilitator, prepare response to public comments.

AGENCY DECISION MILESTONE

- Revise and update documents as necessary. NEPA document input and final SHPO coordination.
- Cultural Resources Final Draft Report - Prepare final draft report of test results, if necessary. Results of these studies shall be included in the NEPA documents.
- Develop Memorandum of Agreement (MOA) for treatment of historic properties, if necessary.
- Assist in preparing draft FR/EA Document for public review.

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- Respond to public review comments and prepare Final FR/EA. Incorporate and respond to written public review comments on the draft FR/EA, oral comments presented at the final public meeting, and internal DQC comments.
- ATR and quality control of final FR/EA document.
- Final results of testing, treatment and mitigations required for historic properties, documented in NEPA documents.
- Complete DQC on the final FR/EA.
- Respond to State and Agency Review comments.

2.4 Engineering (EN)

2.4.1 Engineering Technical Lead (ETL)

All Engineering work and products will conform to the latest edition of the following regulations and publications:

- ER 1110-2-1150 Engineering and Design for Civil Works Projects
- EC 1165-2-217 Review Policies for Civil Works
- EC 2015-18 Technical Lead for E&C Deliverables

The Engineering Technical Lead (ETL) will lead the multidisciplinary engineering team. The ETL participate in all PDT meetings and attend site visits as necessary. The ETL work with the Planners Formulator and Project Manager to research, develop, and review project documents and related items. The ETL will work with the engineering disciplines to prepare and manage the engineering scope, schedule and budget. The ETL is also ultimately responsible for the development and completion of the Engineering Appendix and for the technical quality of all engineering products delivered to the PDT. The ETL can also provide engineering analysis and design support within their field of expertise. The specific roles of the ETL, per study milestone, are shown below.

The ETL will work with the PDT to update applicable portions of the PMP and RR throughout the project. These task are considered to be included in the below itemized task list per milestone.

ALTERNATIVES MILESTONE

- Engineering Resources: Work with core PDT to identify and engage necessary engineering resources. Work with the Engineering team to develop the scope schedule and budget for the project.
- Charette Preparation and Meeting: Develop a brief understanding of system given existing information and report in the Report Synopsis, and participate in charette.
- Risk Register (RR): Assist with the development of the RR. Mentor other engineering team members in the use of RR and documenting risk and uncertainty.
- Site Visit: Perform field investigation of the drainage area, specifically the project locations. Note existing features that may have an impact on flood flows, sediment and debris. Prepare field notes, sketches and take photographs along the proposed project area and observe streambank erosion. Potential factors shall include geologic or human controls, channel training structures, the presence of coarse bed material that could armor and reduce degradation potential, head cuts, areas of sediment deposition, areas of bank instability, and evidence of channel incision.

TENTATIVELY SELECTED PLAN MILESTONE

Hydrologic and Hydraulic Existing Condition Analysis:

- Engineering Resources: Identify and engage engineering resources needed to reach the TSP milestone. Work with team members to update scopes, schedules and budgets to be provided to the Project Manager and Senior Plan Formulator.

- Modeling Support: Provide support to the Hydraulic Engineer in developing the Hydrologic HEC-HMS model.
- Develop Concept "With Project Conditions" Alternatives: Up to ten alternatives will be modeled to reflect desired project conditions. The ETL will work with the PDT to develop the concept level alternatives based on identified measures.
- Engineering Documentation for Milestone: Prepare, gather and organize all engineering documentation into one overall engineering appendix. If multiple appendices are necessary, work with the engineering team to develop an Engineering document.
- PDT Support: Provide information as needed by the PDT to assist in their analysis.
- Design: Begin 35% feasibility level design of anticipated TSP in coordination with all relevant engineering disciplines.
- Review: Provided feedback and explanations to the DQC and ATR teams. Backcheck all responses to comments to ensure comments have been addressed adequately. Respond to comments. Address all comments and provide written responses.

AGENCY DECISION MILESTONE

- Draft Engineering Documentation for ADM: Amend the Engineering Appendix as necessary to include the results of the alternative analyses and more detailed information regarding the TSP.
- PDT Support: Provide Engineering related information as needed by the PDT to assist in their analysis.
- Design: Complete the 35% feasibility level of design for the TSP. This is to include abbreviated plans and specifications and concept drawings.
- Technical Review: Prepare technical review comments for the ATR/IEPR and attend review meetings. Backcheck all responses to comments to ensure comments have been addressed adequately. Response to comments. Address all comments

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

- Meetings, Conferences, and Coordination: Meet at regular intervals with other members of the study team to ensure the work effort is coordinated, and attend the Final Report milestone meeting. In addition, meet with other team members as required to present and discuss hydrologic information developed, and generally coordinate details of the study effort as required among the different disciplines represented on the study team as needed.
- PDT Support: Provide Engineering information as needed by the PDT to assist in their analysis.
- Technical Review: Prepare technical review comments for the final

report and attend review conferences. Backcheck all responses to comments to ensure comments have been addressed adequately. Address all comments and provide written responses.

2.4.2 Hydrology

ALTERNATIVES MILESTONE

- Data Collection: Research, collect, and review hydrologic and hydraulic information from USACE, FEMA, municipal, county, other public agencies, and private consultants.
- Charette Preparation and Meeting: Develop a brief understanding of system given existing information and report in the Report Synopsis, and participate in charette.
- Risk Register (RR): Assist with the development of the RR by determining risk and uncertainty associated with the SMART planning level Hydrology and Hydraulic (H&H) analysis.
- Site Visit: Perform field investigation of the drainage area, specifically the project locations. Note existing features that may have an impact on flood flows,sediment and debris. Prepare field notes, sketches and take photographs along the proposed project area and observe steambank erosion. Potential factors shall include geologic or human controls, channel training structures, the presence of coarse bed material that could armor and reduce degradation potential, head cuts, areas of sediment deposition, areas of bank instability, and evidence of channel incision.
- Model Spin-up: Develop screening level Hydraulics model from existing FEMA and USACE models to support initial alternative screening.

TENTATIVELY SELECTED PLAN MILESTONE

Hydrologic and Hydraulic Existing Condition Analysis:

- Develop Without Project Conditions Hydrologic data: Hydrology will be developed using USGS gage data and Regional Regression Equations. Flows for the 2, 5, 10, 25, 50, 100, 200 and 500 year storms will be computed and used as input into the steady-state hydraulics model. In the case of Selma, the future hydrology may be identical as the existing hydrology.
- Develop planning level steady-state HEC-RAS model: Utilize existing FEMA HEC-RAS model along the Alabama River that spans from Robert F. Henry Lock and Dam to Millers Ferry Lock and Dam. The study area spans the City of Selma along the Alabama River, with some areas extended into Dallas County. Calibrate Without Project Conditions HEC-RAS Model to Available High Water Marks utilizing existing USGS/USACE and other high water marks. At a minimum this should include USGS gages where referenced to a vertical datum.

- Develop Future Without Project Condition Hydraulics: Utilize above mentioned HEC-RAS model, modified to account for future conditions over the next 50 years.
- Develop With Project Conditions Alternatives: Ten alternatives will be modeled to reflect project conditions. Alternatives may include tweaking the various combinations of the 7 structural and 2 non-structural measures.
- Provide HEC-FDA data to Economics: Post process all HEC-RAS data into an acceptable format for input into HEC-FDA. The FDA inputs will be provided to the Econ team for the full suite of storms for all alternatives.
- Draft Hydrology Documentation for Milestone: Prepare hydrologic documentation to include the results of the alternative analyses.
- Draft Hydraulic Documentation for Milestone: Develop a Hydraulic Appendix for the Feasibility report which includes the alternatives analysis.
- PDT Support: Provide hydrologic and hydraulic information as needed by the PDT to assist in their analysis.
- GIS Support: Convert all hydrologic information suitable for display on maps into appropriate GIS layers compatible with ArcGIS format. Follow the SDS (Spatial Data Standard), as described by the CADD/GIS Technology Center of the Federal Government. Store each separable element in the GIS database as a separate theme. Ensure all themes shall be compatible with the ArcGIS format. Prepare metadata for all data.
- Review: Prepare technical review comments for the DQC/ATR and attend review conferences. Backcheck all responses to comments to ensure comments have been addressed adequately. Respond to comments. Address all comments and provide written responses.

AGENCY DECISION MILESTONE

- Draft Hydrologic Documentation for ADM: Amend the hydrologic documentation to include the results of the alternative analyses.
- PDT Support: Provide H&H information as needed by the PDT to assist in their analysis.
- GIS Support. Convert all hydrologic information suitable for display on maps into appropriate GIS layers compatible with ArcGIS format. Follow the SDS, as described by the CADD/GIS Technology Center of the Federal Government. Store each separable element in the GIS as a separate theme. Ensure all themes shall be compatible with the ArcGIS format. Prepare metadata for all data.
- Technical Review: Prepare technical review comments for the ATR/IEPR and attend review conferences. Backcheck all responses to comments to ensure comments have been addressed adequately.

Response to comments. Address all comments.

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

- Meetings, Conferences, and Coordination: Meet at regular intervals with other members of the study team to ensure the work effort is coordinated, and attend the Final Report milestone conference. In addition, meet with other team members as required to present and discuss hydrologic information developed, and generally coordinate details of the study effort as required among the different disciplines represented on the study team as needed.
- PDT Support: Provide H&H information as needed by the PDT to assist in their analysis.
- Technical Review: Prepare technical review comments for the final report and attend review conferences. Backcheck all responses to comments to ensure comments have been addressed adequately. Address all comments and provide written responses.

2.4.3 Geotechnical

All Geotechnical Engineering work and products will conform to the latest edition of the following regulations and publications:

- Engineering Manual (EM) 1110-1-1804 Geotechnical Investigations
- ER 1110-2-1150 Engineering and Design for Civil Works Projects
- ER 1110-1-1807 Drilling in Earth Embankment Dam and Levees
- EM 1110-2-1205 Environmental Engineering and Local Flood Control Channels
- EM 1110-2-1418 Channel Stability Assessment for Flood Control Projects

The Geotechnical Engineer will participate in PDT related meetings and site visits as needed. The Geotechnical Engineer will keep current with project documents and coordinate with the PDT during the development of all geotechnical analysis of the project. The Geotechnical Engineer will research, develop, and review project documents and related construction items. The specific roles of the Geotechnical Engineer, per study milestone, are shown below.

The Geotechnical Engineer will update applicable portions of the PMP and RR throughout the project. These task are considered to be included in the below itemized task list per milestone.

ALTERNATIVES MILESTONE

- **Geotechnical Analysis of Alternatives**: The Geotechnical Engineer will participate in PDT discussions of alternatives (up to six) as the alternatives are developed based on Hydrological and Hydraulic conditions. The

Geotechnical Engineer will produce a written record of recommendations and the associated geotechnical concerns of the alternatives.

- **Site Visit**: The Geotechnical Engineer will conduct a site visit to familiarize themselves with the project location and site conditions. This site visit will assist in developing assumptions for different alternatives and the subsurface investigation plan.
- **Draft Geotechnical Documentation**: The Geotechnical Engineer will produce a draft Geotechnical Report to be included in the Engineering Appendix. The report will include a summary of: alternatives, recommendations and findings.

TENTATIVELY SELECTED PLAN MILESTONE

- **Geotechnical Analysis of TSP**: The Geotechnical Engineer will produce a feasibility-level analyses of the TSP.
- **Subsurface Investigation of TSP**: The Geotechnical Engineer will coordinate, plan, and manage a subsurface investigation. The investigation will be developed to provide information to develop a feasibility-level design of the TSP. The investigation may include laboratory testing if necessary.
- **Geotechnical Design of TSP**: The Geotechnical Engineer will produce a feasibility-level design of the TSP. The Geotechnical Engineer will coordinate with appropriate design disciplines and provide information for the Engineering Appendix.
- **Site Visit**: The Geotechnical Engineer will conduct a site visit of the TSP to further develop their understanding of the site.
- **Technical Review**: Address all geotechnical engineering related DQC review comments and ensure the comments are properly incorporated into the draft report.

AGENCY DECISION MILESTONE

- **Finalize Reports**: Ensure the Feasibility Report/Engineering Appendix is at the final state for ATR, MSC and HQ review.
- **Technical Review**: Address all geotechnical engineering related ATR, MSC, and HQ review comments and ensure the comments are properly incorporated into the draft Feasibility Report/Engineering Appendix.

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

- **Meetings and Coordination**: Meet at regular intervals with other members of the PDT to ensure the work effort is coordinated, and participate in the planning charette and Alternatives Milestone meeting with the VT.

- **Preparation for Planning Chief's Final Approval**: Prepare documents and presentation for Planning Chief's Final Approval.

2.4.4. Cost Engineering

All Cost Engineering work and products will conform to the latest edition of the following regulations and publications:

- ER 1110-1-1300, Cost Engineering Policy and General Requirements
- ER 1110-2-1302, Civil Works Cost Engineering
- ER 1110-3-1301 Hazardous, Toxic and Radioactive Waste Cost Engineering
- ETL 1110-2-573, Construction Cost Estimating Guide for Civil Works
- EP 1110-1-8, Equipment Ownership and Operating Expense Schedule - Region 3
- EM 1110-2-1304, CWICCS
- ECB 2007-17, Cost Risk Analysis Methods
- ER 1110-2-1150, Engineering and Design For Civil Works Projects
- ER 1105-2-100, Planning Guidance Notebook
- EC 1165-2-209, Civil Works Review Policy

The Cost Engineer will participate in PDT related meetings and site visits as needed. The Cost Engineer will keep current with project documents and coordinate with the PDT during the development of the all cost estimates. The Cost Engineer will research, collect, and review project documents and related construction items for the purpose of estimating costs. The specific roles of the cost engineer, per study milestone, are shown below.

The Value Engineering Officer, a member of the Cost Engineering Section, will lead Value Engineering efforts separately from the Cost Engineer.

ALTERNATIVES MILESTONE

- **PMP and RR**: Assist with the development of the PMP (i.e. scope, schedule, and budget) and the RR to document the risk and uncertainty associated with the cost engineering efforts during the Alternatives Milestone.

TENTATIVELY SELECTED PLAN MILESTONE

- **VMP Development**: The Value Engineering Officer will develop the Value Management Plan (VMP). Note this is not a requirement for achieving the Alternatives Milestone, so it may be delayed into the next phase without impact to the study.

- **Update PMP and RR**: Update the PMP and RR to document the technical approach and associated risk through the TSP Milestone.
- **Develop ROM Construction Cost Estimates**: Develop construction cost estimates for the focused array of alternatives through quantities, unit costs, minimal methods of construction, material sources, disposal sites, etc. The minimum level of detail will be a Class 4, as defined in paragraph 15 of ER 1110-2- 1302.
- **Develop Rough Order of Magnitude O&M Cost Estimates**: Develop Operations and Maintenance (O&M) estimates for the focused array of alternatives through quantities, unit costs, historical data, etc.
- **Develop Abbreviated Risk Analyses**: With input from the PDT, develop an abbreviated risk analysis (ARA) for each alternative in the focused array. The purpose of this analysis is to identify the appropriate contingency values to be used in the estimate for each alternative.
- **Develop Conceptual Construction schedules**: Develop conceptual construction schedules for the focused array of alternatives as required by Economics Analysis.
- **Draft a Cost Narrative**: Prepare a detailed cost narrative detailing the formulation of and the assumptions included in each cost estimate and schedule.
- **Document Engineering Appendix and Draft Feasibility Report**: Develop the cost engineering section of the Engineering Appendix and assist the PDT in the description of cost characteristics in the overall draft Feasibility Report, as necessary.
- **Technical Review**: Address all cost engineering related DQC review comments and ensure the comments are properly incorporated into the draft Feasibility Report/Engineering Appendix.

AGENCY DECISION MILESTONE

- **Update PMP and RR**: Update the PMP and RR to document the technical approach and associated risk through the ADM.
- **Technical Review**: Address all cost engineering related ATR, MSC, and HQ review comments and ensure the comments are properly incorporated into the draft Feasibility Report/Engineering Appendix.
- **Value Engineering Study**: Value Engineering/Value Management (VE/VM) is an organized effort to analyze the functions of design, construction, operations, maintenance, facilities, equipment, procedures, methods and supplies to ensure that these functions are achieved at the lowest total cost while maintaining requirements for performance, reliability, quality, maintainability, safety and the user's needs. A basic VE goal during the life of the proposed project is to strive to improve value in overall project cost. The VE process will be

conducted after the TSP Milestone. The VE study will be conducted under applicable laws, policy, ERs, OMs and Circulars.

- The PM, LP, and VE officer will coordinate the scheduling of the VE study. The PM, LP, and VE Officer are responsible for providing overall support to the VE effort as it relates to the proposed project. Conducted by a multi-disciplinary team and led by the VE Officer, VE studies use a six- phase approach:
    - Information Phase: The team learns the background of the proposed project and study documents. The team reviews and defines the current conditions of the proposed project and identifies the goals of the study.
    - Function Analysis Phase: The team defines the proposed project functions using a two-word active verb/measurable noun context. The team reviews and analyzes these functions to determine which need improvement, elimination or creation to meet the proposed project's goals.
    - Creative Phase: The team employs creative techniques to identify other ways to perform the proposed project's function(s). Free use of imagination with no judgment is essential.
    - Evaluation Phase: Alternative solutions are ranked in terms of quality with realistic judgment. The team follows a structured evaluation process to select those ideas that offer the potential for value improvement while delivering the proposed project's function(s) and considering performance requirements and resource limits.
    - Development Phase: The team develops the selected ideas into alternatives (or proposals) with a sufficient level of documentation to allow decision makers to determine if the alternative should be implemented.
    - Presentation Phase: The team leader develops a report and/or presentation that documents and conveys the adequacy of the alternative(s) developed by the team and the associated value improvement opportunity.

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

- **Meetings, Conferences, and Coordination**: Meet at regular intervals with other members of the study team to ensure the work effort is coordinated, and participate in the Civil Works Review Board (CWRB) with the VT.
- **Site Visits and Documentation**: Perform a site visit to verify field conditions for the recommended plan.

- **Develop Feasibility-Level Cost Estimate for Recommended Plan**: Prepare a construction cost estimate using MCACES (MII, current build) software for the Selected Plan. Equipment unit costs will come from the equipment database in MII, which will contain the latest publication of EP 1110-1-8, Equipment Ownership and Operation Expense Schedule – Region 3. Material costs will be obtained from historical data, vendor quotes for significant items (generally 20 percent value compared to the highest material cost item) and the MII cost book (latest version) for the other items. The minimum level of detail will be Class 3, as defined in paragraph 15 of ER 1110-2-1302.
- **Refine O&M Costs**: Based on the additional design detail developed by the PDT of the Selected Plan, refine the conceptual O&M costs.
- **Develop Cost and Schedule Risk Analysis (CSRA)**: With input from the PDT, develop a CSRA for the Selected Plan. The CSRA will determine the contingency values to be used in the Total Project Cost Summary (TPCS).
    - For projects with a fully-funded cost over $40M, a formal CSRA will be developed. The model will be based on the latest version of the Crystal Ball Software, and the results of the CSRA will be presented in a CSRA appendix.
    - For projects with a fully-funded cost under $40M, an abbreviated CSRA will be developed. The model will be based on the latest version of the abbreviated CSRA excel spreadsheet template, and the results of the abbreviated CSRA will be presented in the Cost Engineering Appendix.
- **Prepare a TPCS**: The TPCS will incorporate all Federal and non-Federal costs for construction, mitigation, restoration, associated real estate costs, Planning Engineering and Design, Construction Management, and risk-based contingency, categorized into the applicable Civil Works Work Breakdown Structure (CWWBS).
    - The MII construction cost estimate will serve as the foundation of the TPCS.
    - The estimated cost figures will be escalated to program year (Project First Cost) and to midpoint of construction (Fully-Funded cost), respectively.
    - The cost for each reach or phase (contract) will be displayed on detailed sheets and summarized on the summary sheet.
    - Costs for Lands, Easements, Rights-of-Way, Relocations and Disposal (LERRD) will break out Relocation costs separately from the other Lands and Damages costs, which will be reported as a construction cost under WBS 02 RELOCATIONS.

Planning, Engineering Design (PED) and Construction Management (CM) costs will be calculated as percentages of construction (or as man hour estimates) and shall be provided by the Project Manager.

- **Update Engineering Appendix for the Draft Final Feasibility Report**: Update the cost engineering section of the Engineering Appendix for the recommended plan and assist the PDT in the description of cost engineering characteristics in the overall draft final Feasibility Report, as necessary.
- **Technical Review**: Address all cost engineering related DQC and ATR comments and ensure the comments are properly incorporated into the final Feasibility Report/Engineering Appendix.

2.5 Real Estate

The Real Estate Division, Acquisition Branch, Planning and Purchase Section will participate in meetings, contribute to screening criteria applied to arrive at a focused array of alternatives, and assist the team with arriving at the focused array. The Realty Specialist will also evaluate existing and historical socio-economic conditions and collect land use data in preparation for the next milestone.

ALTERNATIVES MILESTONE
To reach this milestone, the Real Estate Division will assist the PDT with refining the initial array of alternatives to be considered by:

- Obtaining and supplementing existing land use data including aerial data, previous planning reports, tax assessor values for Rough Order of Magnitude (ROM) estimates, and existing NFS land ownership in and around the proposed project area.
- Reducing uncertainty, from a real estate perspective, about planning decisions for the focused array of alternatives that are carried forward for further analysis and evaluation including additional data collection if needed contributing to screening criteria and application of those criteria to reach the focused array of alternatives.
- Additional coordination, including, but not limited to, negotiation of project requirements and funding, coordination of project real estate data needed for major study products, and monitoring of progress and findings associated with real estate study products. To coordinate with the NFS and other community stakeholders regarding Federal acquisition policies and procedures, specifically, Public Law (P.L.) 91-646 due to the non-structural alternative potential for residential and business relocations. In addition, coordination with USACE Office of Counsel (OC) real estate attorneys as needed for real estate work products.

TENTATIVELY SELECTED PLAN MILESTONE

- Review selected alternatives to determine real estate requirements and appropriate real property interests.
- Prepare Rights-of-Entry (ROE) for the PDT for survey and exploration on private properties, if needed. (e.g. HTRW investigations, geotechnical borings, cultural resource surveys, property boundary locations, etc...)
- Real Estate (RE) personnel will prepare all real estate reports and cost estimates for the TSP within the Feasibility Report. A Draft Real Estate Plan (REP) will be prepared as an appendix to the Feasibility Report that outlines the minimum real estate requirements for the proposed project, in accordance with ER 405-1-12, Chapter 12, March 8, 2003. The REP contains a description of the area; the acreage and proposed estates, including non-standard estates, and reasons therefore; a discussion of any land owned by the Federal Government, the NFS or any public entity; an estimate of the P.L. 91-646 relocations; the Baseline Cost Estimate for Real Estate; a discussion of the NFS' ability to acquire LERRD; a discussion of mineral activity, if any, and the attitude of the landowner; a detailed schedule of land acquisition; a preliminary assessment of the facilities/utilities to be relocated; and any other relevant real estate information appropriate for the project.
- RE with GIS support will prepare an initial set of maps and drawings that delineate the real estate acquisition lines based on technical design drawings developed by the EN during feasibility phase and also to analyze and evaluate the effectiveness with the intent of identifying a TSP. Maps and drawings will reflect the minimum real estate required for project purposes.
- Physical Impacts Analysis: If necessary, a written legal opinion will be prepared as to whether flooding will be induced by the construction, operation or maintenance of the proposed project. If induced flooding is expected, a determination will be made as to whether it will rise to the level of a physical impact of an interest in real property for which just compensation must be paid to the owner of the real property. The opinion will describe the analysis of relevant information regarding the depth, frequency, duration, velocity and extent of induced flooding, as well as relevant State and Federal law, and will present a conclusion on the physical impact issue.
- Preliminary Attorney's Opinion of Compensability: If necessary, a preliminary legal opinion will be prepared on whether provision of a substitute facility is required under the Fifth Amendment as compensation for a facility/utility being acquired for the project. The opinion makes findings on whether the owner has a compensable interest, whether the owner has the legal duty to continue to maintain and operate the facility/utility, and whether Federal law requires the

provision of a substitute facility/utility rather than a mere payment of the market value for the property acquired. The preliminary legal opinion differs from the final legal opinion only in its acceptance as fact of the owner's statement of interest in the subject property, without a search of property records.

- Gross Appraisal: A staff appraiser will prepare a gross appraisal of appropriate real estate interests. The appraisal which will include a total estimated value for fee and easement estates, including improvements, minerals, and severance damages. It will also include any additional details or refinement beyond the Initial Real Estate Reconnaissance of the location and description of the area; the special features (i.e., timber, minerals, water rights, etc.); environmental concerns including potential HTRW or lack thereof; existing encumbrances; the highest and best use(s) involved; and the assumptions and limiting conditions. The gross appraisal will be of sufficient detail to provide an accurate cost estimate, which will be sufficient for authorization considering the cost growth limits of Section 902 of P.L. 99-662.
- Relocations of Facilities and Utilities: RE personnel will determine if alternatives for the project require the relocation of any existing facilities or utilities. A staff appraiser will determine the fair market value of any additional lands needed for the relocations. USACE Office of Counsel (OC) and RE Division will coordinate with the NFS to fulfill all legal obligations.
- Relocation Assistance and Advisory Services: Section 205 of Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646), as amended, requires establishment of a relocation assistance advisory program for persons displaced as a result of Federal or Federally-assisted programs or projects. Programs or projects undertaken by USACE shall be planned in a manner that (1) recognizes, at any early stage in the planning of such programs or projects and before the commencement of any actions which will cause displacements of individuals, families, businesses, and farm operations, and (2) provides for the resolution of such problems in order to minimize adverse impacts on displaced persons and to expedite program or project advancement and completion.
- Conduct internal technical reviews of real estate products.
- Coordinate reviews USACE OC real estate attorneys
- Complete additional draft revisions to the Real Estate Appendix, as needed throughout the study period.
- Following the milestone meeting, the Real Estate Division will provide input for updating any decision logs documenting decisions and agreements vetted with the VT.

AGENCY DECISION MILESTONE

The Real Estate Division will support this review process by providing prompt responses to DQC, ATR, IEPR, policy, and public comments and resolving those comments to the extent practical. At this point, the draft REP will be revised accordingly to capture any review comments with discussions of those changes with the PDT and to further support the next milestone.

- Coordinate with the NFS to obtain final assessment of their real estate acquisition capability. This assessment/verification will be included as an exhibit to the REP.
- Coordinate with the NFS concerning an approved Risk Notification Letter, which describes to the NFS certain risks and the possibility of loss of Federal crediting for land acquisition which might occur prior to signing of the Project Partnership Agreement (PPA).
- Provide input to the PDT RR in order to document potential real estate risks that could create variances in the project cost/scope/schedule in accordance with SMART Planning.
- Update of the Baseline Cost Estimate for Real Estate (BCERE) which would include a preliminary market study and a more detailed estimate of all real estate costs (gross appraisal) associated with acquisition of the project's real property requirements.

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

The draft REP will be prepared after the final technical reviews have been completed. The report will discuss and display all data, findings, procedures and assumptions used in the analysis. Changes to comply with appropriate comments from the final technical review will be incorporated into the draft real estate plan. Supervisory review will be accomplished and the draft real estate report will be revised to incorporate appropriate comments. The draft real estate plan will be incorporated into the draft feasibility report.

- Conclude Feasibility-Level Design phase.
- Complete Final Report and Real Estate Appendix.
- Prepare for Planning Chief's Final Approval, as needed.

CHIEF'S REPORT MILESTONE

- Resolve applicable State and Agency comments.

2.6 Economics

ALTERNATIVES MILESTONE

The Economic team member will participate in meetings, contribute to screening criteria applied to arrive at a focused array of alternatives, and assist the team with arriving at the focused array. The project economist will also evaluate

existing and historical socio-economic conditions and collect land use data in preparation for the next milestone.

To reach this milestone the economic section assists the PDT with narrowing the initial array of alternatives to be considered by:

- Obtaining and supplementing existing land use data including aerial data, previous reports, and expert consultations,
- Reducing uncertainty about planning decisions for the focused array of alternatives that are carried forward for further analysis and evaluation including additional data collection if needed,
- Contributing to screening criteria and application of those criteria to reach the focused array of alternatives,
- Documenting existing conditions and the socio-economic sections in the draft appendix,
- Engaging the Planning Centers of Expertise and the VT (including the RIT, ATR lead and OWPR lead) during in-progress reviews (IPRs) and informal communication as needed,
- Engaging District Quality Control, and
- With the PDT update the Report Synopsis, RR, and DMP

TENTATIVELY SELECTED PLAN MILESTONE
The Economics team member will evaluate each alternative in the focused array plus the without project/no action alternative for NED benefits. The economist will determine net benefit (benefits minus costs) for each alternative, identify the plan with the greatest net benefits (termed the NED Plan), and provide other metrics to assist the team with identifying the TSP or LPP. District and Agency (DQC and ATR) reviews will be conducted by assigned experts and supported by the economic section.

- Collect additional land use data, perform structure inventory of the floodplain, value the floodplain, identify and value critical infrastructure, and model alternatives using HEC-FDA to analyze and evaluate effectiveness with the intent of identifying a TSP.
- Evaluation of recreation benefits that may accrue to the TSP (and NED Plan if different) knowing that these benefits will be considered incidental to the primary project purpose of flood damage reduction.
- Support DQC and ATR; respond to reviews; revise modeling and appendix as needed.
- Conduct In-progress Reviews as needed with the PDT and VT.
- Complete the draft economic appendix.
- Update the RR, DMP(s) and documentation of key decisions (decision log).

- Following the milestone meeting:
    - an updated decision log documenting decisions and agreements are vetted with the VT
    - the draft report is released for concurrent public technical, legal, and policy review and comments are resolved

AGENCY DECISION MILESTONE

The Economic Section will support this review process by providing prompt responses to reviewer and public comments, resolving comments to the extent practical, revising the modeling and the draft appendix as necessary, reporting revised results to the team, and supporting the milestone meeting.

- Considers all review comments, conducting IPRs as necessary, and updates the decision log, as needed.
- Updates the RR and develops a summary of significant ("High") risk issues that will be addressed during the feasibility-level design phase of the study or that the team plans to carry forward into Pre-Construction Engineering and Design.
- Updates the team's process documents as needed with the next steps of the study – the DMP, review plan, etc.
- Develops read ahead information for the meeting, e.g., briefing presentation, a report synopsis and highlights of public, technical, policy, legal and IEPR comments.
- Develops Economic sections of the Final Draft Report

CHIEF OF PLANNING APPROVAL TO RELEASE DRAFT CHIEF'S REPORT FOR STATE AND AGENCY REVIEW

Revision to modeling and final results may be required from the Feasibility-Level Design phase as well as additional reviewer comments. The Economic team member will support this process by providing input, timely responses to reviewer comments, and necessary revisions to modeling and the draft appendix.

- Conclude Feasibility-Level Design phase
- Complete Final Draft Report

CHIEF'S REPORT MILESTONE

- Resolve State and Agency Review comments
- Complete Final Feasibility Report and submit to HQUSACE

3.0 Summary of General Study Activities by Milestone:

3.1 Study Initiation to Alternatives Milestone:

The initiation phase of a civil works study is perhaps the most critical phase as it serves to define cost, level of effort, schedule and perhaps even more importantly is that it should define the expectations of the partners and stakeholders involved in a study. Once a FCSA is executed, the Mobile District develops a study team or project delivery team (PDT) to execute the study. The Project Manager leads this team and is responsible for the overall study execution, budget, and schedule. Communications and change management planning are also a key component of project management responsibilities. The Project Management Plan should capture key study elements, the resources required to achieve those elements, and a budgeted schedule which will support completion of the study within the SMART planning (3X3X3) constraints.

In an effort to achieve the next study milestone within the allotted time after the study is initiated (3 – 6 months), the PDT will begin developing the required materials for the Alternatives Milestone Meeting (AMM). The team will take the data available, leverage it with the information gleaned from the scoping charrette, and work to develop lists of problems, opportunities, objectives, and constraints on the significant reaches of the main stem and primary tributaries of the Alabama River. The general measures will then be listed for consideration in each reach and screening criteria developed for measures and alternatives to pass in order to be considered viable for presenting to the vertical team at the AMM.

3.2 Alternatives Milestone to Tentatively Selected Plan:

Alternatives which are carried forward from the preliminary screening will receive detailed modeling and evaluation in preparation to select an alternative as the Tentatively Selected Plan (TSP). This process of screening, refining, and screening again should lead to determining the most cost effective of the alternatives considered for selection as the TSP for final NEPA, cost, and economic evaluations to be conducted. The documentation of the existing conditions, predicted future without project conditions, and alternative evaluations is the foundation for the feasibility study report.

A key element of this portion of the study is H&H modeling of existing conditions, predicted conditions without a project, and various alternatives to determine their effectiveness. Rough order of magnitude (ROM) costs will be developed for the alternatives and economic modeling and analysis will also be completed. The alternatives will be compared to each other as well as to the future without project condition as part of the identifying the NED plan. Environmental coordination will also begin on this final array of alternatives. The alternative with that reasonably maximizes economic benefits consistent with environmental laws will be identified as the NED plan.

3.3 Tentatively Selected Plan to Draft Report Released to Public/Agencies:

Once the TSP milestone is reached, the focus will turn to completion of a draft report which supports the TSP. More detailed design and modeling shall be conducted to assure the TSP should be recommended for implementation as the NED plan. The Draft FR/EA will be fully reviewed and released to the public upon its completion. It will include all NEPA documentation necessary, including an integrated environmental assessment, and all agency coordination up to this point of study.

3.4 Draft Report Released to Public/Agencies to Agency Decision Milestone:

At conclusion of the public/agency review period, the report will be updated to include the additional coordination and the ADM meeting will be held with the vertical team to assure full compliance and support.

3.5 Agency Decision Milestone to State and Agency Review

After the ADM has been reached, the team will revise the FR/EA and provide it to the State and Federal Agencies to review. Comments will be responded to by the PDT.

3.6 State and Agency Review to Final Report Submittal:

Upon completion of the state and agency review, the team will focus on completing the Final Feasibility Study Report. The final report benefits from the incorporation of all review comments (technical, vertical team, agencies, etc.) and will be provided to the South Atlantic Division for endorsement by the Commander to the Chief of Engineers.

3.7 Final Report Submittal to Chief Of Planning Approval:

Once submitted, study focus turns to final preparations for the Civil Works Review Board at which the PDT will present and defend to the HQ team, led by the Chief of Engineers, the recommendations of the Feasibility Study. This is the last USACE vertical team direct involvement in the study process.

3.8 Chief of Planning Approval to Implementation Funds:

After resolving any last questions from the Planning Chief, the USACE Chief of Engineers will sign the Chief's Report recommending the project to the ASA-CW's office for endorsement to the Office of Management and Budget (OMB) for implementation funds.

3.9 Project Quality Control Plan

The PM is responsible for the quality of the overall project coordination and the proper execution of funds provided. The LP shall be responsible for leading the study, providing guidance throughout to assure completion within policy and consistent with the six step planning process. The LP is the primary party responsible for assuring the proper Quality Assurance (QA) during the study. An Engineering Technical Lead is responsible to assure the technical support and products produced within Engineering Division for the study is technically acceptable.

3.9.1 Purpose

USACE products and decision documents must comply with law and policy; and present proposed projects that are environmentally, economically and technically appropriate, accurate, and correct in their content and recommendations. This Project Quality Control Plan (QCP) presents the process that assures quality products. This purpose of the QCP is to assure that:

- The FR/EA are consistent with current criteria, procedures and policy;
- Clearly justified and valid assumptions are used in accordance with established guidance and policy, with any deviations clearly identified and properly approved;
- Concepts, features, analytical methods, analyses, and details are appropriate, fully coordinated, and correct;

- Problems/issues are properly defined and scoped; and
- Conclusions and recommendations are reasonable.

The QCP defines the responsibilities and roles of each review element involved in the quality control process.

3.9.2 Methodology

3.9.2.1 General Process

The quality management methodology that governs the Corps' project review process is specified by Engineering Circular (EC) 1165-2-217, Civil Works Review. This EC details the requirements for review of the FR/EA. The Review Plan for this study documents this process for this study, and is attached as Appendix A of this PMP. The review plan is separately reviewed by the FRM-PCX, approved by South Atlantic Division, and is posted on the District's public website.

The quality management process incorporates reviews both within and external to the District. The EC briefly discusses review within the District, but focuses on external reviews. Within the District, quality management is addressed at the technical section level, by the PDT, and by the District Quality Control (DQC) review. Quality control responsibilities, including team member roles in reviews, internal reviews (PDT and DQC) and technical and policy reviews, are all explained in detail in the Review Plan (see Appendix A). DQC will generally follow the USACE National Planning Centers of Expertise, DQC Primer.

3.9.2.2 Technical Coordination

Generally, product development shall be performed in accordance with established criteria and guidance and with established policy. Meetings with the appropriate review team members during the planning process will be held at key decision points. Meetings will also be held to discuss and resolve technical and/or policy issues that may arise during the course of product development. Technical issues and concerns raised during the technical review process will be documented, as will the resolution of these issues and concerns.

4.0 Schedule

The study schedule (Table 1) below includes 1) the key milestones required by the annual Execution Engineering Circulars (ECs) to be locked and to remain current, and 2) milestones subject to the notification requirements documented in the Implementation Guidance for Section 1002 of WRRDA 2014 (Consolidation of Studies), including (but not limited to):

- Alternatives Milestone (CW261)
- TSP Milestone (CW262)
- Release of the draft report for concurrent review (CW250)
- ADM (CW263)
- District Commander signs the final report (CW160)
- Division Commander endorses the final report (CW260)
- Chief of Planning Approval (CW245) – The PDT should assume Chief of Planning Approval will occur within 60 days of the Division Commander's transmittal of the final report. (HQUSACE will calculate specific dates for CW245 based on the CW260 date.)
- Chief's Report (CW270) – The PDT should assume Chief's Report Milestone will be 12 to 14 weeks after Chief of Planning Approval. (HQUSACE will calculate specific dates for CW270 based on the CW260 date.)

Table 1: Study Schedule

Selma FRM Milestone	Schedule
Feasibility Cost Sharing Agreement Signed (CW130)	09 Oct 18
Alternatives Milestone (CW261)	16 Jan 19
Tentatively Selected Plan Milestone (CW262)	22 Jul 20
Release of Draft Feasibility Report for Public Review (CW250)	17 Sep 20
Agency Decision Milestone (CW263):	11 Dec 20
District Submit Final Feasibility Report (CW160)	09 Apr 21
Division Commander Transmittal (CW260)	07 May 21
Chief of Planning Approval to release report (CW245)	28 Jun 21
Chief's Report Signed (CW270)	07 Oct 21

5.0 Key Assumptions

The PDT developed the following preliminary assumptions. The PDT will review and refine these assumptions during the feasibility study:

- Flooding in the City of Selma along the Alabama River will be the primary focus of the study;
- A full analysis of reasonable alternatives will be performed, including the no action alternative, and structural and non-structural measures, to optimize feasible alternatives to address flood risk while minimizing environmental effects;
- Modeling studies conducted during the feasibility phase will include hydrologic, hydraulic, economics, and potentially sedimentation;
- Public involvement will be achieved through public meetings, workshops, and interagency working group meetings;
- At a minimum, an Environmental Assessment pursuant to NEPA would be prepared;
- The NED Plan or a Locally Preferred Plan (LPP), if one is identified by the non-Federal sponsor, will require compliance with applicable federal laws and regulations as well as applicable Executive Orders and policies. Applicable Federal environmental laws include but are not limited to the NEPA, Endangered Species Act, National Historic Preservation Act (NHPA), Clean Air Act, and Clean Water act; and
- Threatened and endangered species as well as sensitive cultural resources may be present within the study area. Potential impacts to these environmental resources will require coordination with applicable Tribes and appropriate resource agencies.

6.0 Cost Estimate Summary

Selma Flood Risk Management Study Project Management Plan Cost Summary				
		Last Updated:		05-Jul-20
Decision Point	Project Delivery Team Work Group	Total Labor	Non-Labor e.g. Travel	Totals (Rounded)
1	**Study Start to Alternatives Milestone**			
	Programs & Project Mgmt	$0	$0	$0
	Engineering Technical Lead	$0	$0	$0
	Hydrology & Hydraulics	$0	$0	$0
	Survey	$0	$0	$0
	Design	$0	$0	$0
	Cost Estimating	$0	$0	$0
	Geotech	$0	$0	$0
	Structural	$0	$0	$0
	HTRW	$0	$0	$0
	Real Estate	$0	$0	$0
	Environmental	$0	$0	$0
	Cultural Resources	$0	$0	$0
	Plan Formulation	$0	$0	$0
	Economics	$0	$0	$0
	Institute of Water Resources (IWR)	$0	$0	$0
	Regulatory	$0	$0	$0
	Value Engineering	$0	$0	$0
	Public Affairs	$0	$0	$0
	Sponsor In-Kind	$0	$0	$0
	Reviews	$0	$0	$0
	Subtotal	***$0***	***$0***	***$211,226***
	10% Contingency for Adjustments	***$0***	***$0***	***$0***
	Total with Contingency	***$0***	***$0***	***$211,226***
2	**Alternative Milestone to TSP Milestone**			
	Programs & Project Mgmt	$0	$0	$0
	Engineering Technical Lead	$0	$0	$0
	Hydrology & Hydraulics	$0	$0	$0
	Survey	$0	$0	$0
	Design	$0	$0	$0
	Cost Estimating	$0	$0	$0
	Geotech	$0	$0	$0
	Structural	$0	$0	$0
	HTRW	$0	$0	$0
	Real Estate	$0	$0	$0

	Environmental	$0	$0	$0
	Cultural Resources	$0	$0	$0
	Plan Formulation	$0	$0	$0
	Economics	$0	$0	$0
	Institute of Water Resources (IWR)	$0	$0	$0
	Regulatory	$0	$0	$0
	Value Engineering	$0	$0	$0
	Public Affairs	$0	$0	$0
	Sponsor In-Kind	$0	$0	$0
	Reviews	$0	$0	$0
	Subtotal	***$0***	***$0***	***$993,774***
	10% Contingency for Adjustments	***$0***	***$0***	***$0***
	Total with Contingency	***$0***	***$0***	***$993,774***
3	**TSP Milestone to Agency Decision Milestone**			
	Programs & Project Mgmt	$62,750	$0	$62,800
	Engineering Technical Lead	$40,698	$0	$40,700
	Hydrology & Hydraulics	$58,568	$0	$58,600
	Survey	$0	$0	$0
	Design	$0	$0	$0
	Cost Estimating	$15,900	$0	$15,900
	Geotech	$78,938	$257,000	$335,900
	Structural	$47,975	$14,895	$62,900
	HTRW	$0	$227,000	$227,000
	Real Estate	$28,600	$0	$28,600
	Environmental	$46,599	$0	$46,600
	Cultural Resources	$38,950	$0	$39,000
	Plan Formulation	$96,100	$0	$96,100
	Economics	$36,900	$0	$36,900
	Institute of Water Resources (IWR)	$12,280	$0	$12,300
	Regulatory	$0	$0	$0
	Value Engineering	$0	$0	$0
	Public Affairs	$0	$0	$0
	Sponsor In-Kind	$0	$0	$0
	Reviews	$63,250	$0	$63,300
	Subtotal	***$627,509***	***$498,895***	***$1,126,600***
	10% Contingency for Adjustments	***$62,751***	***$0***	***$62,751***
	Total with Contingency	***$690,259***	***$498,895***	***$1,189,351***
4	**Agency Decision Milestone to Final Feasibility Report**			
	Programs & Project Mgmt	$61,495	$0	$61,500
	Engineering Technical Lead	$20,349	$0	$20,300
	Hydrology & Hydraulics	$11,108	$0	$11,100
	Survey	$0	$30,000	$30,000
	Design	$0	$0	$0
	Cost Estimating	$40,280	$0	$40,300
	Geotech	$25,571	$0	$25,600
	Structural	$20,200	$0	$20,200
	HTRW	$0	$0	$0
	Real Estate	$4,400	$0	$4,400

	Environmental	$7,608	$0	$7,600
	Cultural Resources	$14,250	$0	$14,300
	Plan Formulation	$86,184	$0	$86,200
	Economics	$4,500	$0	$4,500
	Institute of Water Resources (IWR)	$0	$0	$0
	Regulatory	$0	$0	$0
	Value Engineering	$0	$0	$0
	Public Affairs	$0	$0	$0
	Sponsor In-Kind	$0	$0	$0
	Reviews	$80,500	$0	$80,500
	Subtotal	***$376,445***	***$30,000***	***$406,500***
	10% Contingency for Adjustments	***$37,644***	***$0***	***$37,644***
	Total with Contingency	***$414,089***	***$30,000***	***$444,144***
5	**Final Report to Chief's Report**			
	Programs & Project Mgmt	$25,100	$0	$25,100
	Engineering Technical Lead	$5,087	$0	$5,100
	Hydrology & Hydraulics	$4,000	$0	$4,000
	Survey	$0	$0	$0
	Design	$0	$0	$0
	Cost Estimating	$6,360	$0	$6,400
	Geotech	$1,112	$0	$1,100
	Structural	$5,050	$0	$5,100
	Civil-Site	$0	$0	$0
	Real Estate	$3,520	$0	$3,500
	Environmental	$5,706	$0	$5,700
	Cultural Resources	$9,500	$0	$9,500
	Plan Formulation	$26,851	$0	$26,900
	Economics	$52,200	$0	$49,500
	Institute of Water Resources (IWR)	$2,456	$0	$2,500
	Regulatory	$0	$0	$0
	Value Engineering	$0	$0	$0
	Public Affairs	$0	$0	$0
	Sponsor In-Kind	$0	$0	$0
	Reviews	$0	$0	$0
	Subtotal	***$146,942***	***$0***	***$144,400***
	10% Contingency for Adjustments	***$14,694***	***$0***	***$14,694***
	Total with Contingency	***$161,636***	***$0***	***$159,094***
	Totals	**$1,265,985**	**$528,895**	**$2,997,590**
	Rounded Totals	**$1,266,000**	**$529,000**	**$2,998,000**

Table 2: Study Cost Summary by Discipline and Milestone

7.0 Work-in-Kind

As part of the 2018 Supplemental Funding Package, the U.S. Army Corps of Engineers has identified long-term disaster recovery projects and additional

short-term repairs to be accomplished. The purpose of the funds is to complete flood and coastal storm damage reduction studies in 14 states and two territories that will focus on the opportunities to reduce the overall flood risk facing the Nation and to provide technical assistance to communities to help them reduce their flood risk. The Selma Flood Risk Management Study has been included in the supplemental funding package and will be 100 percent funded by the Federal Investigations Account. As a result, no cost share match is required by the sponsor so long as sufficient Federal Investigations funds are available.

8.0 Anticipated Funding to Meet FCSA/Schedule

This study is 3X3 compliant. Table 3 show the approximate funding stream requirements to maintain compliance.

Table 3: Funding Requirements

Federal Fiscal Year (FY)	Federal	Non-Federal
FY 18	$200,000	Not Applicable
FY 19	$1,000,000	Not Applicable
FY 20	$200,000	Not Applicable
FY 21	$1,600,000	Not Applicable

9.0 Joint Non-Federal Sponsor, Stakeholders, Public Meeting Schedule

Additional meetings may be scheduled as necessary and the dates of the meetings are tentative though they reflect generally the timeline required to complete the study within the required 3 year schedule.

Table 4: Recommended Meetings

Required Dates	Non-Federal Sponsor(s)	Stakeholders/ Agencies	Public	Notes
13 Aug 2018	X	X		Partnering Meeting
23 Oct 2018	X	X	X	Scoping Meeting (charrette)
16 Jan 2018	X	X		USACE Alternative Milestone Meeting via video teleconference or webinar
22 Jul 2020	X	X		USACE Tentatively Selected Plan Meeting via video teleconference or webinar
01 Oct 2020	X	X	X	Draft Report Public Meeting
11 Dec 2020	X	X		USACE Agency Decision Milestone Meeting via video teleconference or webinar

10.0 Budgeting for Implementation (Civil Works Process Post-Study)

Once the feasibility study phase is completed by issuance of the Chief's Report (estimated September 2021), the study will then be endorsed by USACE to the Assistant Secretary of the Army (Civil Works) office for a subsequent endorsement to the Office of Management and Budget (OMB) for funding. The Mobile District will compete for Preliminary Engineering Design (PED) funding for budget year 2021. The associated cost for PED is normally based on approximately 10% - $12% of the construction cost, depending on the size and complexity of the project. The estimated cost for construction will be determined at the TSP study milestone (Estimated October 2019) and the estimated PED cost will be included in the budget request as early as January of 2020 for FY 2022. Beginning in January 2021, the construction cost will be requested for FY 2023. Both of these out year requests will be subject to availability of Federal funding and the completion of the study with a favorable Chief's Report.

11.0 Additional Agreements Required for Implementation of Recommended Plan

Upon issuance of the Chief's Report, a Design Agreement (DA) would be necessary to cost share PED and subsequently a Project Partnering Agreement (PPA) for construction of the project features. The PED phase and construction phase are cost shared at the rate of 65% Federal and 35% non-Federal under current laws and regulations. At all times, the Federal and non-Federal expenditures must be in approximate proportionate share in accordance with the associated agreement for any phase of work to continue. Lands, easements, relocations, and replacements (LERR) are the responsibility of the non-Federal Sponsor and are part of the total project cost from which the cost share amounts are determined. Once the PPA is executed, the estimated value of LERR will be loaded into the financial system as a non-Federal Sponsor responsibility (for the sake of accounting) and will be subject to adjustment, verification, and approval before an actual credit can be issued to the non-Federal Sponsor.

	Staffing Management Plan
	Project Name: City of Selma FRM Study
	Date: 09 Oct 2018
	Project Manager: David P. Newell
	Approver:
	Jay Smitherman, Chief, Civil Works Br, PPMD

Purpose of the Staffing Management Plan

This Staffing Management plan provides the Project Manager with a framework to identify and justify human resource needs and provide an effective work force to accomplish the project work.

Roles and Responsibilities

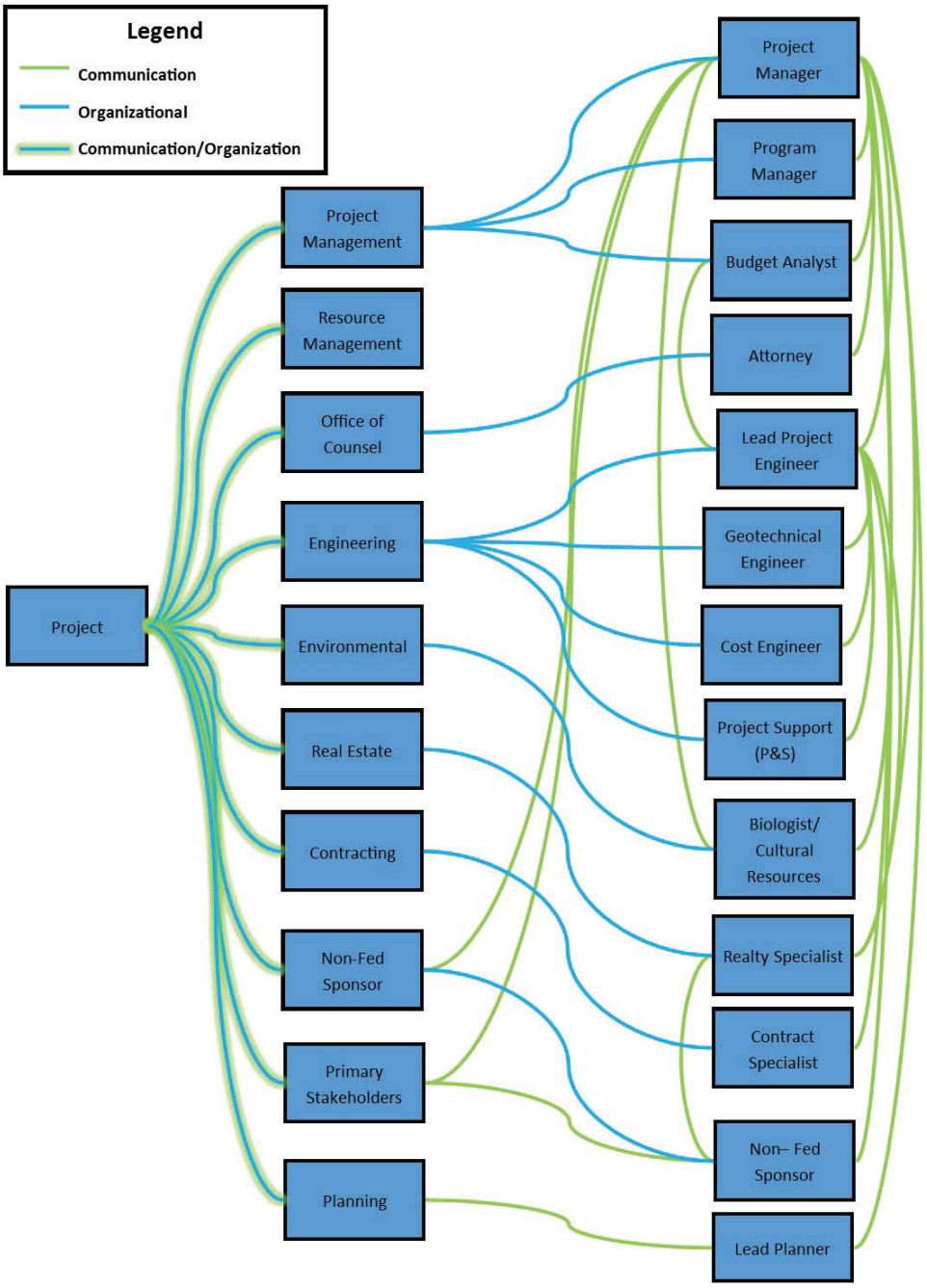
The following project participants, at a minimum, perform in the planning and execution of project communications:

- Non-Federal Sponsor (NFS) – City of Selma, AL is the NFS receiving benefits. The full study is funded through the Investigations Program managed by USACE as budgeted by the Administration. The NFS is an integral part of the Project Delivery Team (PDT).
- Project Manager – Designated by the Mobile District to represent USACE in all issues related to this project. The project manager relies on the project team to provide sound technical advice on all aspects of the project.
- Project Delivery Team – Team members are assigned by their functional managers which consider experience, work load, and other factors to support project needs and organizational goals. The Project Delivery Team (PDT) is responsible for communicating in many paths, but always by providing current, relevant, and accurate information or guidance as appropriate to the information available and to the project needs.
- Project Cooperation Team: A subset of the PDT and is a term introduced in the FCSA to include the NFS involvement in a project as part of the Total Project Cost. The NFS may track their formal involvement to coordinate the project (meetings with stakeholders, joint inspections, design review, etc.) and may be afforded credit for their efforts as part of their cost share.

- Project Stakeholders – the municipalities, other counties, parks, representatives of Congress (state and Federal), and groups or individuals of interest whom will follow the study efforts and are subject to make inquiries to track the progress of the study. It is critical that current, consistent information is provided when requested and that the Public Affairs Officer, Mobile District, maintains situational awareness of study progress and of any requests received by USACE staff from Congressional interests.

Project Organization

The general structure of the team for the City of Selma FRM study and their functional management chain are identified on the following page.



Resource Requirements

Primary required resources are outlined in the diagram above. There are other both indirect and direct funded administrative and support resources which are not identified in the diagram, but are important to the project and provide support to the team members identified. These resources occur throughout the organizational structure and are funded either by project generated overhead or by direct project funding on an as need basis. Additional resources primarily include review, logistical, legal, administrative, and functional management (supervisors).

Resource Staffing Plan

All resources necessary for this project are considered to have part time capability toward this project. The level of resource commitment will vary throughout the life of the project depending upon the need. Project Management will remain constant as a life cycle requirement for the project through study approval and potentially the implementation phase (workload dependent).

Resource Constraints

The Mobile District is physically located in an active Tropical Storm/Hurricane region along the Gulf of Mexico. The District is also often responsible for the debris cleanup mission from these storms and other disasters both within District boundaries and nationwide. The District also supports the military mission, including professional expert reach back capability for active war efforts.

Though no delays are anticipated due to resource demands during the execution of this project, these same resources are drawn upon to support these missions, when they do occur. Team members also are responsible for balancing their workload with other projects assigned by their functional managers (supervisors) in order to support District goals and objectives. Although continuity in team members is desired, there may be an occasional requirement to make a substitution to avoid unnecessary delays to the execution schedule. The Project Manager is responsible for coordinating these needs with functional managers over the course of the project.

Staffing Reports

The District conducts a civil works program review every four weeks. Each active project is reviewed for status, line item by line item, from a civil works report maintained by Engineering Division. This meeting helps functional managers, project managers, planners, real estate, environmental, and project engineers informed on workload and project schedule. The Lead Planner is responsible for updating the report prior to each meeting. The lead planner and/or the Project Manager briefs at this meeting and issues of concern are documented for follow-up with the Project Delivery Team and/or functional

managers. This not only helps in assigning and tracking workload, but also provides an opportunity for competing interests and developing workload to be recognized early to aid in resource balancing.

Training Requirements

No specific additional training requirements have been identified by the team or project management. Team members all have a comfortable working level of knowledge and experience in the role expected of them. If substitutions were necessary, replacement resources would be expected to possess a similar level of familiarity with work of this nature.

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Version	Author	Date	Comments
1.0	David Newell	10/09/2018	

	Project Communications Management Plan
	Project Name: City of Selma FRM Study
	Date: 12 Nov 2016
	Project Manager: David Newell
	Approver:
	Approver Name and Title:
	Jay Smitherman, Chief, Civil Works Br, PPMD

Purpose of Communications Management Plan

The success of any project is heavily reliant upon the project team members and stakeholders being thoroughly informed in a timely manner. Information such as scope, time, cost or quality changes, current project schedule status, current and projected cost data, and project decisions or issues all need to be disseminated to project members and stakeholders. This Communications Plan establishes the project's processes and requirements for the collection and distribution of project data.

Document accessibility and security are also key factors. Not every project participant requires access to every project document, but some information, such as the Feasibility Report and Environmental Assessment, should be available to all. Methods need to be in place to identify security and accessibility to project information.

Roles and Responsibilities

The following project participants, at a minimum, perform in the planning and execution of communications management:

- Project Non-Federal Sponsor (NFS) – key to maintaining open communications with Project Manager on all things project related, in particular communications on lands, easements, acceptability of design, local ordinances and regulations, and any "work in kind" desired for project. The NFS is also the local authority for public inquiries on the project. The Project Manager can provide input concerning budget, schedule, or other questions about project delivery which may occur.

- Project Manager – responsible for execution of project, including maintaining open communication with NFS, project engineers, and the remainder of the PDT and their functional managers. Feedback to stakeholders concerning the project should ideally come from the Project Manager, but at the very least the Project Manager should

remain informed, if not involved in such communications, so as to understand and manage stakeholder expectations. Communicating any significant change requirements to NFS and Stakeholders, in accordance with the process detailed in the Change Management Plan, is the responsibility of the Project Manager.

- Project Delivery Team - responsible for internal communications between each other and the project engineer and/or Project Manager to assure prompt project delivery, communicating status and team needs accurately up front and along the way. Responsible for bringing foreseeable issues forward to lead planner and/or project engineer or Project Manager in an effort to avoid unnecessary project delays, impacts to quality and/or to budget, or misperception of stakeholders.

- Project Stakeholders – follow the project status in effort to manage public perceptions, manage schedules for pending projects with dependency on completion of this project, and maintain open communications with the NFS and/or the Project Manager.

Stakeholder Identification

Stakeholder	Role	POC	E-mail	Phone
City of Selma	NFS partner			
Dallas County				
FEMA	FIRM updates			
Local Press	Media			
USFWS	Impacts to T&E Species			

Project Reports

The following reports can be generated as appropriate in support of the project:

Project Status/Press Release
Financial Data
Updated Study Schedules
Cost Share Closeout (NA)
Open Issues/Action Items
Quality Assurance Inspection
Change Control Forms

Ad-hoc or specialized report requests may arise during the project. These reports are all subject to approval of the Project Manager and/or other affiliated functional managers.

Project Meetings

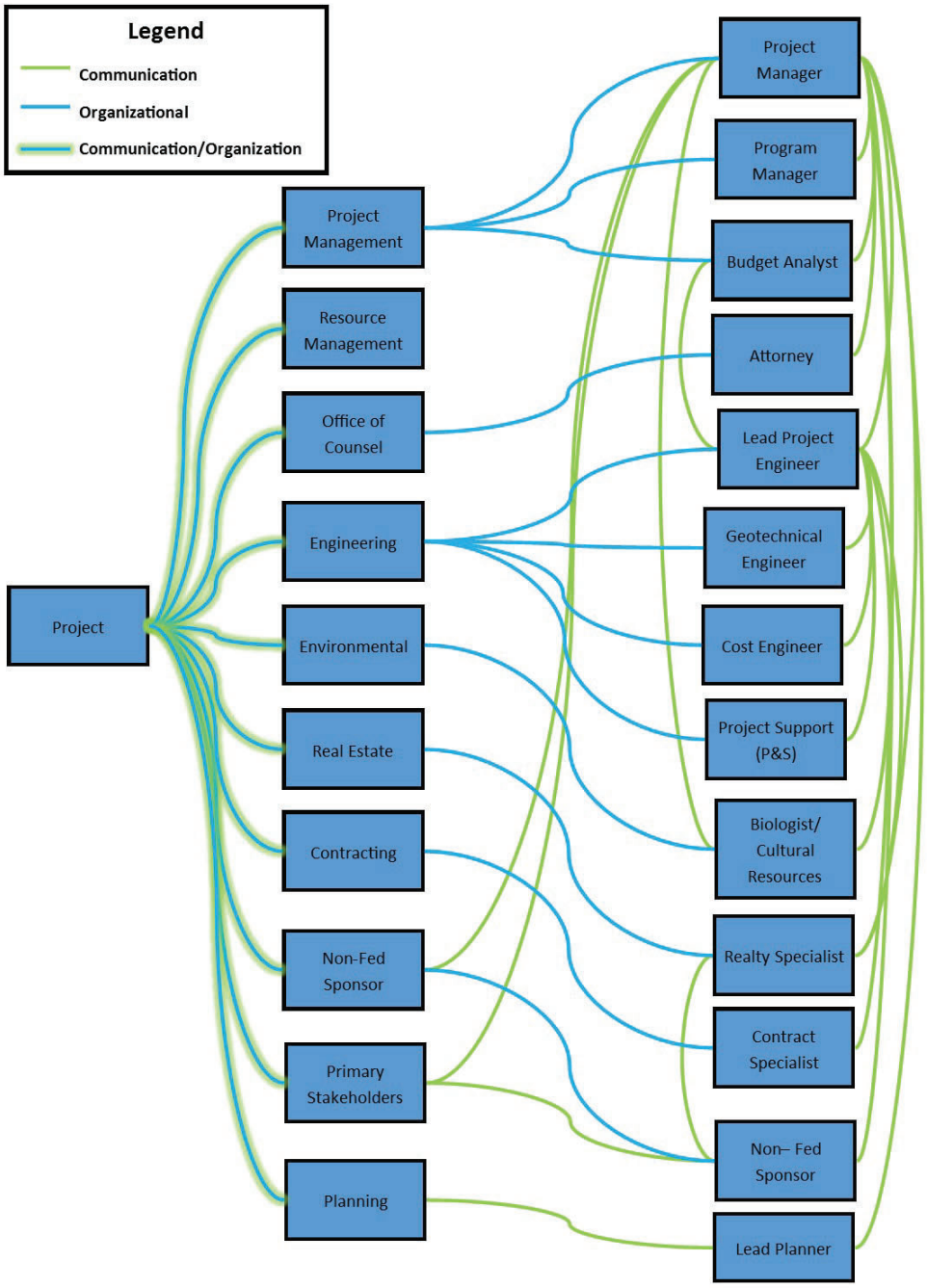
Project Delivery Team (PDT) meetings are to occur every two weeks during the study to assure the scope and schedule are maintained. A brief summary of each team meeting shall be provided by the Project Manager within five working days of meeting completion. PDT meetings will also be called to kickoff formal reviews, resolve issues or conflicts, and to respond to stakeholder inquiries as necessary. The Project Manager is responsible for scheduling meeting space and calling the PDT meetings. Also the Lead Planner is responsible for incorporating the feedback from meetings and reviews, as appropriate, into the project.

Project Information Accessibility

Access to project information should be planned. Centralized technical project files shall be maintained by Planning and Environmental Division in a central location available to the PDT. The Project Manager shall maintain an e-file of pertinent emails, attachments, letters, reviews, plans, agreements, contract task order awards, and any other project correspondence. Hardcopies may also be maintained, as deemed appropriate, by the Project Manager. Upon request, the project NFS shall be provided a copy of specific data or correspondence by the Project Manager, Lead Planner, or the Project Engineer, as appropriate to the study.

Major Communication Pathways

The primary communications pathways are demonstrated in the graphic below. This same graphic was used in the Staffing Management Plan to demonstrate the primary staffing involved in the project. Communications to/from Corps contractor is not included in this graphic but is to be controlled by the Contracting Officer and authorized staff. Documentation of contractor communications, field inspections, etc. are ultimately the responsibility of the Project Engineer, or designated inspector, as appropriate to the contract utilized. Formal documentation of Contractor communications shall be maintained in the Resident Management System (RMS) by Construction Division.


Legend
Communication
Organizational
Communication/Organization
Project
Project Management
Resource Management
Office of Counsel
Engineering
Environmental
Real Estate
Contracting
Non-Fed Sponsor
Primary Stakeholders
Planning
Project Manager
Program Manager
Budget Analyst
Attorney
Lead Project Engineer
Geotechnical Engineer
Cost Engineer
Project Support (P&S)
Biologist/ Cultural Resources
Realty Specialist
Contract Specialist
Non– Fed Sponsor
Lead Planner

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Version	Author	Date	Comments
1.0	David Newell	10/09/2018	

Meeting Architecture

Project Name:

Meeting Name	Frequency	Time	Location	Leader	Attendees	Purpose	Report(s) Used

	Integrated Change Management Plan
	Project Name: City of Selma FRM Study
	Date: 09 Oct 2018
	Project Manager: David Newell
	Approver:
	Approver Name and Title:
	Jay Smitherman, Chief, Civil Works Br, PPMD

Purpose of Integrated Change Management Plan

Studies are dynamic efforts and as such change is inevitable. One of the greatest challenges to a study's success is controlling the impact of change or managing changes to the benefit of the study objectives. By accepting the fact that change will occur and planning for the management of change, the probability of project success is increased and enhanced.

The purpose of the Integrated Change Control Plan is to define all processes, practices, tools, review bodies, and authority necessary to monitor and control project performance, identify change and the potential impact of change on study objectives.

Roles and Responsibilities

The following project participants, at a minimum, perform in the planning and execution of project change management:

- Project Non-Federal Sponsor (NFS) – City of Selma, Alabama as NFS, will be engaged with any decisions which significantly impact the study scope, schedule, or budget needs.

- Project Manager (PM) – the PM will be engaged with any changes which are proposed during the study, particularly those which may impact scope, budget or schedule and the availability of resources. The PM also has the responsibility to determine the level of coordination required to adopt a change and assure that this coordination is accomplished prior to agreeing to changes during the implementation of the project. The PM is responsible for the signed approval of change requests which are within study scope and budget. Minor (no/low cost) changes may be approved by the PM and/or the LP or ETL, provided they are within scope and budget of the study and do not necessarily require a formal change management form, depending on the nature of the change.

- Project Delivery Team – Communication of the need for any changes, proposed from across the various disciplines on the Project Delivery Team (PDT) is essential to assure no triggers are introduced which may impact environmental, cultural, real estate, or other elements for which documentation or permitting has been achieved. Engineering must also be included in change coordination to assure the intent and the sustainability of the concept design is upheld and that the functionality of the project is not negatively impacted. Sometime seemingly minor changes recommended during implementation of a study can have major potential impacts to the desired outcome. Open communications across the project team, including the NFS, is critical to assure there are no surprises at study completion. The PM, the LP, and the ETL are charged with assuring this communication occurs at the appropriate levels at the appropriate time.

- Other Stakeholders – The majority of the other stakeholders are interested in impacts to study schedule. Significant delays, as defined by the PM and the NFS, should be communicated to these stakeholders. The PM and/or the NFS will make coordinated updates to these stakeholders as appropriate during the study.

- Program Manager (PgM) – the PgM for the Investigations Program shall be engaged IF proposed changes impact budget or schedule. The PM is responsible for maintaining reports on obligation and expenditure rates for the PgM. If adjustments to budget or execution schedule are subject to be significantly impacted by proposed changes, the PgM assumes the approval role for signature of change requests. The PM is responsible for coordinating necessary changes and making adjustments to execution schedules with the PgM. The PgM is responsible for coordinating budget requirements upward with the vertical team as well as back down to the PM. Ultimately, if the requested change cannot be supported fiscally, then the change request must be denied or perhaps deferred until a more strategic time (if study schedule allows).

Review and Approval Process

Following are the steps involved in the change control process. A process flow diagram at the end of this section graphically displays the steps.

I. A potential change is identified by any team member or project stakeholder and coordinated with the appropriate LP, ETL, PM, or NFS for a formal change request to be initiated.

II. The change request form is completed (see appendix of this document) by the NFS and/or the appropriate LP or ETL with the assistance of the PM or designee.

III. The PDT evaluates the request to make sure impacts are thoroughly discussed and identified on the form. Decision-makers should be able to clearly see the impact of change on the project (time, cost, scope, quality and risks).

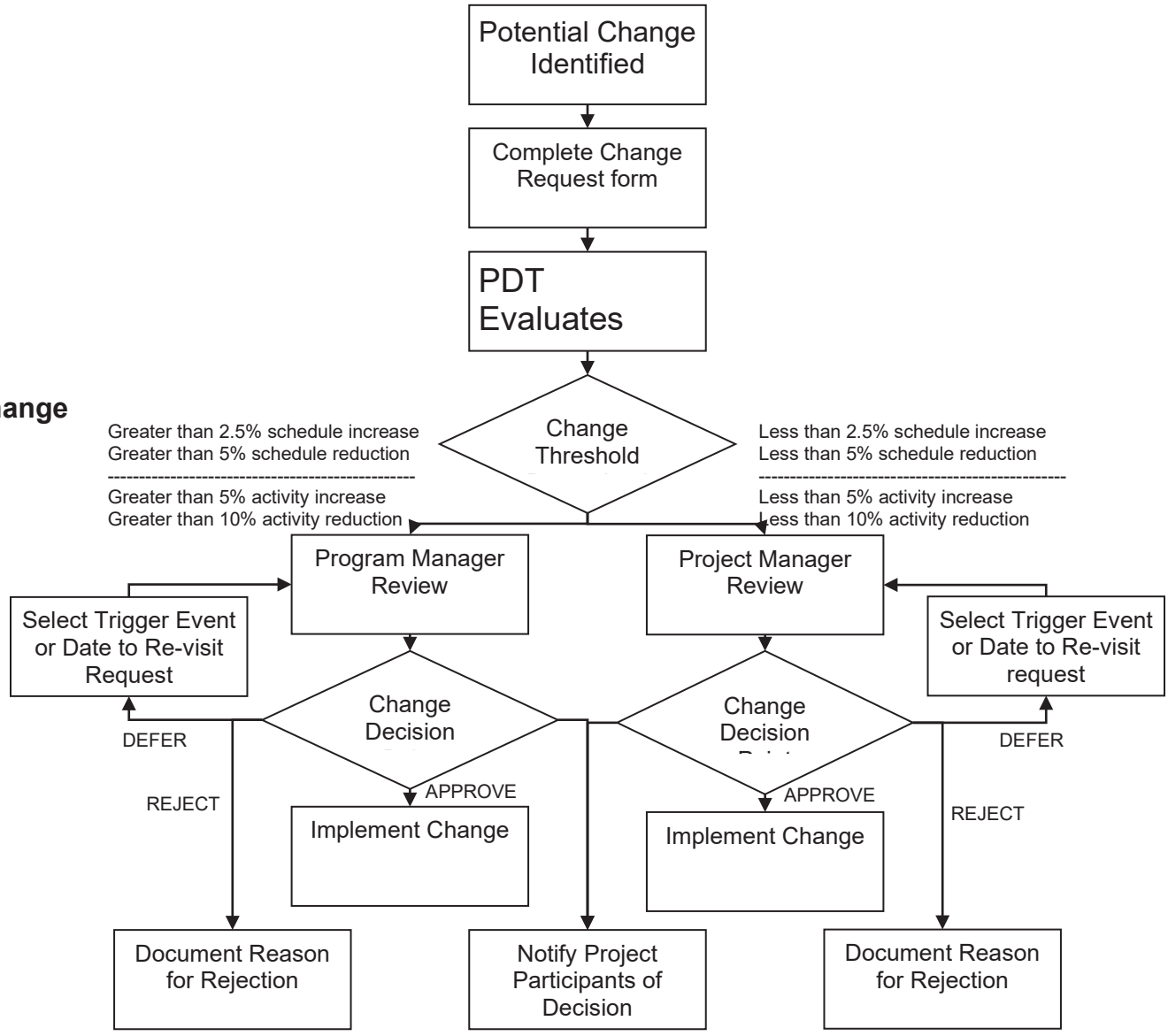
IV. If the impact of the change exceeds the thresholds outlined in this plan then the change is presented to the PM for review. The PgM has ultimate approval or denial of the change. Any changes under the threshold for the PgM approval are sent to PM for approval.

V. If the change is denied the reason is documented and the requestor is notified. No other action is taken.

VI. If the change is approved then it is documented and implemented. The change will be reflected in all the appropriate Project Management documents. (e.g. schedule, budget, WBS, Risk management plan, etc.) Re-baselining may be appropriate (see section on re-baselining below).

VII. If a change request is deferred, then one of two actions is taken. In the case where a “trigger event” which would necessitate the change is known, the PDT will monitor the occurrence of the event. The change request will be re-visited when the event occurs. Otherwise, the PDT will schedule a date to re-evaluate the request. See the review and approval process flow chart below:

Change



Thresholds

Describe the limits that trigger the change control process for scope (WBS), cost, schedule and possibly resources. An example may be critical WBS elements where costs exceed 10% of budget, or perhaps a schedule element that is falling behind and will require additional resources to meet a critical deliverable. At this time, the thresholds provided in the chart above (as examples) will be used to evaluate impacts, but at the project level.

Change Identification, Documentation, Implementation and Reporting

Once a potential need for change is identified, it should be coordinated promptly with the PM, LP, ETL, or NFS as most appropriate to whom identified the need for change (contractor, team member, stakeholder, etc.). Changes are to be tracked by the individual whom initiates the formal change request document to assure prompt response. The PM is responsible for assuring the NFS concurs with changes which may impact project functionality or overall project budget in which the NFS cost shares. Updating the WBS, schedules, and budget/cost documents with approved changes are the responsibility of the PM.

Re-Baselining

The project schedule and costs are baselined early in the project. Any of these artifacts may experience enough change throughout the project to require re-baselining. The original baseline can be updated only once early in each fiscal year for all Civil Works projects. This annual baseline is referred to as the "basic" schedule. Any changes over the course of the fiscal year will be reflected as the "current" schedule. Change requests submitted after re-baselining as current will be assessed for impacts against the "basic" schedule baseline, not the original baseline nor to the current schedule baseline. Success metrics for the Civil Works program are based upon comparison to the basic schedule baseline, regardless to adjustments during the course of the year (reflected as the "current" schedule).

General guidance for re-baselining includes:

- General cost overruns and schedule slippages due to performance or poor estimation are NOT sufficient reasons to re-baseline.
- As long as there is no change in scope, a PM is able to further decompose activities that were previously recorded at a higher level. This DOES NOT constitute a re-baselining but is considered an update.
- Requested changes to cost and/or schedule to achieve the original scope. This DOES constitute a re-baselining.
- Reductions in funding ARE an acceptable reason to re-baseline. This should be accompanied by an explanation of how the funding cuts impact the original scope of the study.
- Adjustment of basic schedule, milestones and execution rate (2101), to reflect current project requirements may only be accomplished during the annual window provided early each fiscal year. This annual update to the study baseline is the only truly effective re-baselining effort for the purpose of measuring study execution. All other re-baselining of the current schedule must be justified and documented along the way in programming notes, but will not reflect in the success metrics during same fiscal year.

Appendix A. – Change Request Form

The attached form is to be used for all change requests in the study affecting scope, schedule, cost, and risk.

RECORD OF AMENDMENTS

Version	Author	Date	Comments
1.0	David Newell	10/09/2018	

	Change Request Form
	Project Name:

Refer to the last page for a diagram of the change approval process

1. Change Request Information – To be Completed by Requestor	
Requestor	Request Date
Proposed Change Description and References	
Justification/Reason for Change	
Impact of Not Implementing Proposed Change	
Alternatives	
Baseline(s) Affected: ☐ Scope (WBS) ☐ Schedule ☐ Cost	
Impact on Scope	
Impact on Schedule	
Impact on Cost	
Risk Analysis	
Reference Risk Number Risk Description Change in Risk Impact From To Change in Risk Probability From To Change Impact Analysis on Risk	

2. Impact Analysis – To Be Completed by Project Delivery Team
Review Date
Change Control Number
Comments
Classification

3. Project Manager Review Results – To Be Completed by Project Manager
Review Date
Comments
Approved ☐
Forward to Program Manager ☐
Rejected ☐

Defer Until (trigger event or future date)
Reason for Rejection/Deferral

4. Program Manager Review Results – To Be Completed by Program Manager		
Review Date Comments Approved ☐ Rejected ☐ Defer Until (trigger event or future date)		
Reason for Rejection/Deferral		
Name	Position	
Signature:_____		
Name	Position	
Signature:_____		
Name	Position	Signature:_____
Name	Position	
Signature:_____		